

List of All Chemicals

P Cnicus benedictus (Asteraceae)

Common name(s)

Blessed Thistle

How used

GRAS

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Plant Part	Low PPM	High PPM	StdDev	*Reference
(+)-CATECHIN	Plant	--	--		Jim Duke's personal files.
Activities (30)					
ACE-Inhibitor IC50=0.155 mM/l					
ACE-Inhibitor 0.24 mg/ml rbt (weak activity)					
AntiHIV EC50=4 ug/ml					
Antiaggregant IC68=200 ug/ml					
Anticoagulant					
Anticomplementary 1/2 aspirin					
Antiinflammatory IC50=40-943 uM (cf indomethacin IC50=1 uM)					
Antimutagenic ID50=50-100 nM					Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507.ACS, Washington 402 pp.
Antioxidant					
Antiperoxidant					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiprostaglandin IC50=40-943 uM (cf indomethacin IC50=1 uM)					
Antiradicular					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiulcer					
Beta-Adrenergic Receptor Blocker 10 uM (weak activity)					Zhu, M., Phillipson, J. D., Greengrass, P. M., Bowery, N. E., Cai, Y. 1997. Plant Polyphenols: Biologically Active Compounds or Non-Selective Binders to Protein? Phytochemistry, 44(3): 441-447.
COX-1-Inhibitor IC50=183-279 uM (cf indomethacin IC50=1 uM)					
COX-2-Inhibitor IC50=546-5,910 uM (cf indomethacin IC50=1 uM)					
Cancer-Preventive					Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardiotonic					
Cyclooxygenase-Inhibitor					
Cytotoxic TC50=>100 ug/ml					
Dermatitogenic					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hemostat					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hepatoprotective					Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Immunostimulant					Economic & Medicinal Plant Research, 1: 124.
NO-Inhibitor IC11=250 uM					
Neuroprotective 1-10 uM					
Phagocytotic					Economic & Medicinal Plant Research, 1: 124.
Vasoconstrictor					Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
Xanthine-Oxidase-Inhibitor					Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.
cAMP-Phosphodiesterase-Inhibitor					
2-ACETYLNORTRACHELOSIDE	Plant	--	--	*	
ABSINTHIN	Plant	--	--		Jim Duke's personal files.
Activities (3)					
Insecticide	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,NY.191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.				
Larvicide	Wright,C.W.(Ed)2002.Medicinal&Aromatic Plants-Industrial Profiles.Artemisia.344pp.Maffei,M.(Ed)2002.Vetiveria.The Genus Vetiveria.Taylor&Francis.NY,191pp.Southwell,I.,Lowe,R.(Eds)1999.Tea Tree.The Genus Melaleuca.Harwood Acad.Pub.Amsterdam,Netherlands.				
Toxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				

ALPHA-AMYRENONE	Shoot	--	--	Jim Duke's personal files.
ALPHA-AMYRIN	Shoot	--	--	Jim Duke's personal files.
Activities (10)				
Analgesic				
Antiedemic IC43=40 mg/kg ipr rat				
Antiinflammatory IC71=1,000 ppm orl				
Antinociceptive				
Antitumor				
Antiulcer				
Cytotoxic 50-400				
Gastroprotective				
Hepatoprotective				
Insectifuge				
ALPHA-AMYRIN	Plant	--	--	*
Activities (10)				
Analgesic				
Antiedemic IC43=40 mg/kg ipr rat				
Antiinflammatory IC71=1,000 ppm orl				
Antinociceptive				
Antitumor				
Antiulcer				
Cytotoxic 50-400				
Gastroprotective				
Hepatoprotective				
Insectifuge				
ALPHA-AMYRIN-ACETATE	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Activities (2)				
Antiinflammatory				
Antinociceptive				
ALPHA-AMYRINE	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
ALUMINUM	Plant	11.3	85.0	-0.59
Activities (5)				
Antisilicotic	Medicinal and Poisonous Plants of the Tropics. Leeuwenberg, A.J.M., ed. Pudoc, Wageningen. 1987.			
Antivaginitic	Martindale's 28th			
Candidicide	Martindale's 28th			
Encephalopathic	Martindale's 29th			
Pesticide				
AMYRENONE	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
ANABSINTHIN	Plant	--	--	Jim Duke's personal files.
APIGENIN-7-GLYCOSIDE	Plant	--	--	List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Activities (4)				
Anticomplementary				
Antiinflammatory	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch für Apotheker und Ärzte</i> . Wissenschaftliche Verlagsgesellschaft mbH Stuttgart. 393 pp.			
Antispasmodic	Planta Medica, 56: 638, 1990.			
Nodulation-Signal	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.			
ARCTIGENIN	Plant	--	--	*
Activities (22)				
AntiHIV IC85=0.5 uM				
AntiHIV IC65=0.27 uM				
AntiTNF				

Antileukemic IC50=0.067-0.53 uM	Life Sciences 55: 1061.
Antileukemic 0.2-1.4 uM	
Antilymphomic ED50=0.53-2 uM	
Antiproliferant IC74=5 uM	
Antiproliferant IC88=20 uM	
Antitopoisomerase-II	
Antitumor	Williamson, E. M. and Evans, F. J. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antitumor (Liver) IC50=3.5 uM	
Antiviral	
Cytotoxic	
Differentiator 0.5-50 uM	
Differentiator IC60=10 uM	
Differentiator IC79=50 uM	
HIV-RT-Inhibitor IC69=0.27 uM	
Immunomodulator	
Immunostimulant	
Pesticide	
Phosphodiesterase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.

ARCTIIN	Seed	--	--	List, P.H. and Horhammer, L. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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Activities (4)

Anticancer IC50=8.9 uM
Antitumor (Liver) IC50=4.9 uM
Diuretic
Narcotic

ARTEMISIFOLIN	Plant	--	--	Jim Duke's personal files.
ARTEMISIIFOLIN	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.

Activities (1)

Antitumor	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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ASCORBIC-ACID	Plant	4.0	30.0	-0.59	*
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Activities (112)

Acidulant FEMA 6,000	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Aldose-Reductase-Inhibitor	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Analgesic 5-10 g/day	
Angiotensin-Receptor-Blocker	
AntiAGE 2,000 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
AntiCFS 500-1,000 mg	
AntiCTS 1,000 mg 3x/day	
AntiCrohn's 50-100 mg/day/or/man	Martindale's 29th
AntiLyme 500-2,000 mg	
AntiRaynaud's 500 mg 1-2x/day	
Antiaggregant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidiaging 400 mg/day	
Antiallergic	
Antialzheimeran 2,000-6,000 mg/day	
Antiarthritic 0.2-1 g/day	
Antiasthmatic 1,000 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiatherosclerotic	
Antibacterial	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Anticataract 350 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticataract 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reservse insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Anticataract 1 g 3x/day	
Anticervicaldysplastic 1.000-	

Anticlimacteric 500-5,000 mg/day	
Anticold 1-2 g/man/day	
Antidecubitic 500 mg/man/2x/day	Martindale's 28th
Antidementia	
Antidepressant 2,000 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antidiabetic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Aluminum)	Economic & Medicinal Plant Research, 6: 189.
Antidote (Cadmium)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidote (Lead)	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidote (Paraquat)	Martindale's 28th
Antieczemic 3.5-5 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiedemic 1 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antinecephalitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiendometriotic 2,000 mg/day	
Antifatigue 500-1,000 mg	
Antifibrotic 1,000-2,000 mg	
Antigallstone 1,000-3,000 mg/day	
Antigastritic	
Antigingivitic	
Antiglaucomic 2 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antihangover 1,000 mg	
Antihemorrhagic 1 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihepatitic 2-6 g/man/day	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihepatotoxic	Economic & Medicinal Plant Research, 6: 189.
Antiherpetic 1-5 g/day	
Antihistaminic 2 g/day orl man	
Antihypertensive	
Antiinfertility 1 g/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiinflammatory	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antilepric 1.5 g/man/day	Martindale's 28th
Antilithic 1,000-3,000 mg/day	
Antimaculitic	
Antimeasles	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antimenopausal 500-5,000 mg/day	
Antimigraine	Martindale's 29th
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antineuramidase	
Antinitrosic 1 g/man/day	Martindale's 28th
Antiobesity 1 g 3x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiorchitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiostearthritic 1 g 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiosteoporotic 500 mg/day	
Antioxidant 100 ppm	
Antiparkinsonian 1 g 2-3x/day	
Antiparotitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antiperiodontitic 1 g 2x/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antipneumonic	Pizzorno, J.E. and Murray, M.T. 1985. <i>A Textbook of Natural Medicine</i> . John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antipodriac	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antipoliomyelic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antipyretic	Economic & Medicinal Plant Research, 6: 189.
Antiradicular	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antiretinotic	
Antirheumatic	
Antirhinitic 1,000 mg 3x/day	
Antiscorbutic 10 mg/man/day	Martindale's 28th
Antiseptic MIC=3.3-217 mg/ml	Martindale's 28th
Antiseptic 4-8 g/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antishingles	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antispasmodic 500-5,000 mg/day	
Antistress 500-1,000 mg	
Antisyndrome-X 1-4 g/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95

Antitumor (Lung)					
Antulcer					
Antiviral 1-5 g/day					
Apoptotic 1-10 mM					
Asthma-preventive 1,000 mg/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Beta-Adrenergic Receptor Blocker					
Beta-Glucuronidase-Inhibitor 1.5 g/day/man					
Calcium-Antagonist					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Cardioprotective					
Cold-preventive 1-2 g/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Collagenic					
Detoxicant					
Diuretic 700 mg/man/orl					
Fistula-Preventive	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Hypocholesterolemic 300-1,000 mg/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Hypoglycemic	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Hypotensive 1,000 mg/man/day					
Immunomodulator					
Immunostimulant	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95				
Interferonogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Lithogenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Mucolytic 1 g/woman/day	Martindale's 28th				
Pesticide					
Uricosuric 4 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Urinary-Acidulant	Martindale's 29th				
Vasodilator					
Vulnerary	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				

ASH Seed -- 41000.0 -0.21 CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses

ASH Plant 17689.0 133000.0 0.22 *

ASTRAGALIN Shoot -- -- Jim Duke's personal files.

Activities (7)

ACE-Inhibitor ID50=180 ug/ml rat (24 hr.)

Aldose-Reductase-Inhibitor IC30=1 uM

Aldose-Reductase-Inhibitor IC62=10 uM Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. *Phytochemistry*, 23: 1885-1888.

Antileukemic

Expectorant

Hypotensive Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Immunostimulant

BENEDICTIN Shoot -- -- Jim Duke's personal files.

BENEDICTINE Plant -- -- List, P.H. and Horhammer, L. *Hager's Handbuch der Pharmazeutischen Praxis*, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

BENEDICTINOLIDE Shoot -- -- Jim Duke's personal files.

BENZALDEHYDE Shoot -- -- Jim Duke's personal files.

Activities (24)

Allergenic

Anesthetic

Antibacterial

Anticancer

Antimutagenic

Antipeptic

Antiseptic

Antispasmodic

Antitumor

FLavor FEMA 150-800	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Immunostimulant	
Insecticide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Insectifuge 50 ppm	J. Stored. Prod. Res., 22:141, 1986.
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Narcotic	Merck 11th Edition
Nematicide MLC=1 mg/ml	Shoyakugaku Zasshi, 44: 183.
Pesticide	
Sedative	Buchbauer et al, e.g.Buchbauer et al,1993.Therapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. Bioactive Volatile Compounds from Plants. ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Termiticide LD100=5 mg/g	
Tyrosinase-Inhibitor ID50=820 uM	
Tyrosinase-Inhibitor ID50=87 ug/ml	
Tyrosinase-Inhibitor ID50=0.82 mM	
Tyrosinase-Inhibitor ID50=830 uM	

BENZOIC-ACID	Plant	--	--	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
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Activities (20)

Allergenic	Martindale's 28th
Anesthetic	
Antibacterial 33-1,250 ppm	
Antibacterial MBC=800 ug/ml	
Antitotic	Martindale's 28th
Antipyretic	
Antisalmonella MIC=800 ug/ml	
Antiseptic 800 ug/ml	
Antiyeast MFC=1,600 ug/ml	
Choleretic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Expectorant	
FLavor FEMA 250	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide MFC=1,600 ug/ml	
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Pesticide	
Phytoalexin	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Tyrosinase-Inhibitor ID50=710 uM	
Tyrosinase-Inhibitor ID50=640 uM	
Uricosuric	
Vulnerary	

BETA-CAROTENE	Plant	18.0	133.0	-0.01	*
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Activities (53)

Allergenic	
Androgenic?	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
AntiPMS	
Antiacne	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiaging	
Antiarthritic	
Antiasthmatic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticancer	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Anticarcinomic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Anticervical dysplastic	
Anticorony 50 mg/man/2 days	
Antihyperkeratotic	
Antiichthythic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antileukoplakic	

Antilupus 150 mg/man/day/2 mos	Martindale's 28th
Antimaculitic	
Antimastitic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.
Antioxidant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiozoenic	
Antipapillomic	
Antiphotophobic 30-300 mg/man/day	Martindale's 29th
Antipityriasic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiporphyric 30-300 mg/man/day	Martindale's 28th
Antiproliferant	Joseph, J., Nadeau, D. and Underwood, A. 2001. The Color Code. Hyperion, NY.
Antipsoriac	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiradicular	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antirheumatic	
Antistress	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antitumor	Simon, P.W. Carrots and Other Horticultural Crops as a Source of Provitamin A Carotenes. HortScience, 25(12): 1495, 1990.
Antitumor (Breast) IC45=60 ug/ml	
Antitumor (CNS) IC43=45 ug/ml	
Antitumor (Colon) IC43=45 ug/ml	
Antitumor (Lung) IC30=60 ug/ml	
Antitumor (Prostate)	
Antitumor (Stomach) IC26=45 ug/ml	
Antiulcer 12 mg 3x/day/man/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiulcer 15,000-25,000 IU/day	
Antixerophthalmic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
COX-1-Inhibitor IC78=50 ug/ml	
COX-2-Inhibitor IC82=50 ug/ml	
Cancer-Preventive 22 ppm	Jim Duke's personal files.
Chemopreventive	
Colorant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Gastroprotective	
Immunostimulant 180 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Interferon-Synergist	
Mucogenic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Phagocytotic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Prooxidant 20 ug/g	
Thymoprotective	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

BETA-SITOSTEROL Seed -- 243.0 -0.54 Jim Duke's personal files.

Activities (47)

Androgenic	
Angiogenic	
Anorexic	Martindale's 28th
Antiadenomic	Merck 11th Edition
Antiandrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.
Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from Vaccinium myrtillus (Bilberry) Fruits and Cell Cultures. Plant Sci., 131(1): 95-103.
Anticancer (Cervix)	
Anticancer (Lung)	
Antiedemic IC54=320 mg/kg orl	
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antifertility	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Antigonadotropic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. Journal of Ethnopharmacology, 28: 221-234, 1990.
Antihyperlipoproteinaemic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiinflammatory	
Antileukemic	
Antilymphomtic	
Antimutagenic 250 ug/ml	
Antiophidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC44=10 uM	

Antiprostaglandin 30 mg/day/12 wks	
Antiprostatadenomic	Merck 11th Edition
Antiprostatic 10-20 mg 3 x/day/orl man	
Antipyretic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Antitumor (Cervix)	
Antitumor (Lung)	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
Apoptotic	
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of <i>Melodorum fruticosum</i> . <i>Phytochemistry</i> , 29(5): 1667-1670, 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.
Caspase-8-Inducer	
Estrogenic	
Febrifuge	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Gonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Hepatoprotective	
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypolipidemic 2-6 g/day	
Pesticide	
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Ubiquot	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Ulcerogenic 500 mg/kg ipr rat	

BETA-SITOSTEROL	Plant	--	--	*
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Activities (47)

Androgenic	
Angiogenic	
Anorexic	Martindale's 28th
Antiadenameic	Merck 11th Edition
Antiandrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antibacterial	Recently became Internat. J. Crude Drug Res. 28(1,2,3,4):1990, page 155.
Anticancer (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Anticancer (Cervix)	
Anticancer (Lung)	
Antiedemic IC54=320 mg/kg orl	
Antiestrogenic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antifeedant	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Antifertility	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antigonadotrophic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antihyperlipoproteinæmic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiinflammatory	
Antileukemic	
Antilymphomtic	
Antimutagenic 250 ug/ml	
Antiophidic 2.3 mg mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC44=10 uM	
Antiprogestational	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Antiprostaglandin 30 mg/day/12 wks	
Antiprostatadenomic	Merck 11th Edition
Antiprostatic 10-20 mg 3 x/day/orl man	
Antipyretic	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Antitumor (Breast)	Madhavi, D. L., Bomser, J., Smith, M., Singletary, K. 1998. Isolation of Bioactive Constituents from <i>Vaccinium myrtillus</i> (Bilberry) Fruits and Cell Cultures. <i>Plant Sci.</i> , 131(1): 95-103.
Antitumor (Cervix)	
Antitumor (Lung)	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> .

Apoptotic	
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Recently became <i>Internat. J. Crude Drug Res.</i> 28(1,2,3,4):1990, page 155.
Caspase-8-Inducer	
Estrogenic	
Febrifuge	Neuwinger, H. D. 1996. African Ethnobotany - Poisons and Drugs. Chapman & Hall, New York. 941 pp.
Gonadotropic	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Hepatoprotective	
Hypocholesterolemic 2-6 g/man/day/orl	Martindale's 30th
Hypocholesterolemic 9-3,330 mg/man/day/orl	Martindale's 28th
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypolipidemic 2-6 g/day	
Pesticide	
Spermicide	Malini, T. and Vanithakumari, G. 1989. Rat Toxicity Studies With B-Sitosterol. <i>Journal of Ethnopharmacology</i> , 28: 221-234, 1990.
Ubiquiot	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Ulcerogenic 500 mg/kg ipr rat	

CAFFEIC-ACID Plant -- -- Jim Duke's personal files.

Activities (102)

Aldose-Reductase-Inhibitor 4 ug/ml (weak activity)	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allergenic	
Analgesic	
AntiHIV EC50=200 ug/ml	
AntiLegionella	
Antiaidnoviral	Economic & Medicinal Plant Research, 5: 207.
Antiaggregant	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antiaging	
Antiatherogenic	
Antibacterial	
Anticancer	
Anticarcinogenic	Economic & Medicinal Plant Research, 6: 189.
Antidepressant	
Antiedemic	Economic & Medicinal Plant Research, 6: 189.
Antielastase IC50=93 um/l	
Antielastase IC50=86 ug/ml (475 uM)	
Antiescherichic	
Antiflu	Economic & Medicinal Plant Research, 5: 207.
Antigonadotropic	Jim Duke's personal files.
Antihemolytic 25 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antihepatoadenomic 200 ppm diet orl mus	
Antihepatotoxic	
Antiherpetic 50 ug/ml	
Antiherpetic EC50=>50 ug/ml	
Antihistaminic	
Antihypercholesterolemic	Economic & Medicinal Plant Research, 6: 189.
Antihyperthyroid	
Antiinflammatory	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene	
Antimelanogenic	
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18.
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.18.
Antiophidic	
Antioxidant 50 uM	
Antioxidant IC57=30 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 30 mM	
Antioxidant 1.3 x Vit. E	

Antiperoxidant IC50=44 uM	Planta Medica, 57: A54, 1991.
Antiperoxidant IC35=200 ug/ml	
Antiperoxidant IC85=100 ug/ml	
Antiproliferant	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antiprostaglandin	
Antiradicular 10 uM	Ohnishi, M., Morishita, H., Iwahashi, H., Toda, S., Shirataki, Y., Kimura, M., and Kido, R. 1993. Inhibitory Effects of Chlorogenic Acids on Linoleic Acid Peroxidation and Haemolysis. <i>Phytochemistry</i> . 36(3): 579-583. 1994.
Antiradicular 1/3 quercetin	
Antiradicular 30 mM	
Antiradicular IC50=32-35 uM	
Antiseptic	
Antispasmodic EC50=3.4-15 uM	<i>Phytotherapy Research</i> , 4: 73.
Antistaphylococcal	
Antistomatitic	Economic & Medicinal Plant Research, 5: 207.
Antisunburn	
Antithiamin	Phenolic Compounds in Food and Their Effects on Health, 69.
Antithyroid	Jim Duke's personal files.
Antitumor 200 ppm diet orl mus	
Antitumor (Skin)	
Antitumor-Promoter IC42=10 uM	<i>Cancer Research</i> , 48: 5941.
Antiulcerogenic	
Antivaccinia	Economic & Medicinal Plant Research, 5: 207.
Antiviral IC50=62.5 ug/ml	
Anxiolytic	
CNS-Active	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
COX-2-Inhibitor IC32=100 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic 2% (diet)	
Chemopreventive	
Cholagogue	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Choleretic	Williamson, E. M. and Evans, F. J.. <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Clastogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Co-carcinogenic	
Collagen-Sparing	
Cytoprotective	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Cytotoxic TC50=200 ug/ml	
DNA-Active	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
DNA-Protective	
Diuretic	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte</i> . Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Fungicide MIC=0.4 mg/ml	
Hepatocarcinogenic 400 ppm diet orl mus (in the absence of alcohol)	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 210.
Hepatotropic	
Histamine-Inhibitor	
Immunostimulant	
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (<i>Asteraceae</i>). <i>Economic Botany</i> 48(2): 111-120, 1994.
Leukotriene-Inhibitor	
Lipoxygenase-Inhibitor IC27=5 mM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690.
Lipoxygenase-Inhibitor IC50=62-148 uM	
Lyase-Inhibitor IC50=94-164 uM	
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. <i>Phenolic Compounds in Food and Their Effects on Health</i> , Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. <i>Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health</i> , Ch.19.
Pesticide	
Prooxidant	
Prostaglandigenic	
Sedative 500 mg	
Sunscreen IC50=2.5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.
Sunscreen IC91=5 mg/l	Lazarova*, G., Kostova, I., Neychev, H. 1992. Photodynamic damage prevention by some hydroxycoumarins. <i>Fitoterapia</i> 64(2): 134-136, 1993.

Jim Duke's personal files.

Tumorigenic

Vulnerary

Xanthine-Oxidase-Inhibitor IC50=39.21 uM

Mills, Simon and Bone, Kerry. 2000. *Phytotherapy*. Churchill Livingston, Edinburgh.**CALCIUM**

Plant 1490.0 11200.0 -0.26 *

Activities (28)

AntiPMS 1 g/day

Antiallergic 500 mg/day

Antianxiety

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antiarrhythmic 500-1,500 mg

Antiarthritic 1,000 mg/day

Antiatherosclerotic 500 mg/day

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Anticlimacteric 1,000-1,500 mg/day

Antidepressant

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antidote (Aluminum)

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antidote (Lead)

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antihyperkinetic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antihypertensive

Antiinsomniac

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antimenopausal 1,000-1,500 mg/day

Antiobesity

Antiosteoporotic 500-2,000 mg/day

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Antiperiodontitic 750 mg/day

Antirheumatic 1,000 mg/day

Antistress 500-1,500 mg/day

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antitoxic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Anxiolytic 500-1,500 mg/day

Calcium-Channel-Blocker

Diuretic

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Hypocholesterolemic 500 mg/day

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Hypotensive 1 g/day

Laxative 1,000-1,200 mg

Tranquilizer 500-1,500 mg/day

Vasodilator

CAMPESTEROL

Plant -- -- Jim Duke's personal files.

Activities (2)

Antioxidant IC37=10 uM

Hypocholesterolemic Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.

CAR-3-ENE

Shoot -- -- Jim Duke's personal files.

CARBOHYDRATES

Plant 101080.0 760000.0 0.56 *

CERYL-ALCOHOL

Plant -- -- List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

CHROMIUM

Plant 0.2 1.8 -0.7 *

Activities (24)

Amphiglycemic?

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

AntiAGE 200-1,000 ug

Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. *Syndrome X - The complete nutritional program to prevent and reserve insulin resistance*. John Wiley & Sons, New York. 272 pp. \$24.95

AntiCFS 200 ug

Antiacne

Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. *Syndrome X - The complete nutritional program to prevent and reserve insulin resistance*. John Wiley & Sons, New York. 272 pp. \$24.95

Antiaging 200-1,000 ug

Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. *Syndrome X - The complete nutritional program to prevent and reserve insulin resistance*. John Wiley & Sons, New York. 272 pp. \$24.95

Antiatherosclerotic 20 ug/day

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Anticerotic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antidiabetic 200-1,000 ug

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antidote (Lead)

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antifatigue 200 ug

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antiglycosuric 200-1,000 ug

Davies, S., and Stewart, A. 1990. *Nutritional Medicine*. Avon Books, New York. 509pp.

Antibesity 200-1,000 ug

Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. *Syndrome X - The complete nutritional program to prevent and reserve insulin resistance*. John Wiley & Sons, New York. 272 pp. \$24.95

ug	RESISTANCE. JOHN WILEY & SONS, NEW YORK. 272 pp. \$24.95
Antitriglyceride 20 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antitriglyceride 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Cardioprotective Energizer	
Hypocholesterolemic 20 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Hypocholesterolemic 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypoglycemic 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypotensive 200-1,000 ug	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Immunomodulator	
Insulinogenic	
Memorigenic	

CINNAMALDEHYDE	Plant	--	--	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
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Activities (60)

Acaricide	
Adrenergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Allelochemical IC100=2.5 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Allergenic	
Anesthetic	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Antiaggregant 200 uM	Economic & Medicinal Plant Research, 5: 343.
Antibacterial MIC=250-1,000 ug/ml	
Antienterococcic MIC=250 ug/ml	
Antiescherichic MIC=500 ug/ml	
Antiherapeutic	
Antiinflammatory	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Antiklebsiellic MIC=1,000 ug/ml	
Antileukemic	
Antimutagenic	HerbalGram No. 24, page 40.
Antipneumonic MIC=1,000 ug/ml	
Antipseudomonnic MIC=1,000 ug/ml	
Antipyretic	
Antisalmonella MIC=500 ug/ml	
Antispasmodic	
Antistaphylococcic MIC=250 ug/ml	
Antiulcer 500 mg/kg/orl	
Antiurease	
Antiviral	
CNS-Depressant	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, réprint 1989.
CNS-Stimulant	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, réprint 1989.
COX-2-Inhibitor IC50=245 uM	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=16-40 ppm	
Choleretic 500 mg/kg/orl	
Chronotropic	
Circulatory-Stimulant	
Cyclooxygenase-Inhibitor	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Cytotoxic ED50=5-60 ug/ml	
Flavor	
Fungicide 1.7-250 ppm	
Fungicide MIC=16-40 ppm	
Herbicide	Iefferv B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost. London. 791

Histaminic	
Hypoglycemic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Hypotensive	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Hypothermic	
Inotropic	
Insecticide	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Irritant	Rinzler, C. A. 1990. <i>The Complete Book of Herbs, Spices and Condiments. Facts on File</i> , New York. 199 pp.
Lipoxygenase-Inhibitor	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. <i>Zulu Medicinal Plants. An inventory</i> . University of Natal Press, Pietermaritzburg. 450 pp.
Monoaminergic	
Mutagenic	
Nematicide 100 ug/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	
Pesticide	
Sedative	
Sprout-Inhibitor	Duke, J.A.. Personal Communication.
Teratogenic	
Termicide LD96=1 mg/g	
Termicide LD100=5 mg/g	
Tranquilizer	
Tyrosinase-Inhibitor ID50=129 ug/ml	
Tyrosinase-Inhibitor ID50=970 uM	
Vasodilator	
Vibriocide MIC=250 ug/ml	

CINNAMALDEHYDE Shoot -- -- Jim Duke's personal files.

Activities (60)

Acaricide	
Adrenergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Allelochemical IC100=2.5 mM	Lydon, J. & Duke, S., <i>The potential of pesticides from plants</i> , pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Allergenic	
Anesthetic	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. <i>Zulu Medicinal Plants. An inventory</i> . University of Natal Press, Pietermaritzburg. 450 pp.
Antiaggregant 200 uM	Economic & Medicinal Plant Research, 5: 343.
Antibacterial MIC=250-1,000 ug/ml	
Antienterococcic MIC=250 ug/ml	
Antiescherichic MIC=500 ug/ml	
Antiherpetic	
Antiinflammatory	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. <i>Zulu Medicinal Plants. An inventory</i> . University of Natal Press, Pietermaritzburg. 450 pp.
Antiklebsiellic MIC=1,000 ug/ml	
Antileukemic	
Antimutagenic	HerbalGram No. 24, page 40.
Antipneumonic MIC=1,000 ug/ml	
Antipseudomonic MIC=1,000 ug/ml	
Antipyretic	
Antisalmonella MIC=500 ug/ml	
Antispasmodic	
Antistaphylococcic MIC=250 ug/ml	
Antiulcer 500 mg/kg/orl	
Antiurease	
Antiviral	
CNS-Depressant	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
CNS-Stimulant	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
COX-2-Inhibitor IC50=245 uM	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide MIC=16-40 ppm	

mg/kg/orl	
Chronotropic	
Circulatory-Stimulant	
Cyclooxygenase-Inhibitor	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Cytotoxic ED50=5-60 ug/ml	
FLavor	
Fungicide 1.7-250 ppm	
Fungicide MIC=16-40 ppm	
Herbicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Histaminic	
Hypoglycemic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Hypotensive	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Hypothermic	
Inotropic	
Insecticide	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Irritant	Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.
Lipoxygenase-Inhibitor	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Monoaminergic	
Mutagenic	
Nematicide 100 ug/ml	Shoyakugaku Zasshi, 44: 183.
Perfumery	
Pesticide	
Sedative	
Sprout-Inhibitor	Duke, J.A.. Personal Communication.
Teratogenic	
Termiteicide LD96=1 mg/g	
Termiteicide LD100=5 mg/g	
Tranquilizer	
Tyrosinase-Inhibitor ID50=129 ug/ml	
Tyrosinase-Inhibitor ID50=970 uM	
Vasodilator	
Vibriocide MIC=250 ug/ml	

CINNAMALDEHYDE Flower -- -- Jim Duke's personal files.

Activities (60)

Acaricide	
Adrenergic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Allelochemic IC100=2.5 mM	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Allergenic	
Anesthetic	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Antiaggregant 200 uM	Economic & Medicinal Plant Research, 5: 343.
Antibacterial MIC=250-1,000 ug/ml	
Antienterococcic MIC=250 ug/ml	
Antiescherichic MIC=500 ug/ml	
Antiherapeutic	
Antiinflammatory	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.
Antiklebsielic MIC=1,000 ug/ml	
Antileukemic	
Antimutagenic	HerbalGram No. 24, page 40.
Antipneumonic MIC=1,000 ug/ml	
Antipseudomonnic MIC=1,000 ug/ml	
Antipyretic	
Antisalmonella MIC=500 ug/ml	
Antispasmodic	

MIC=250 ug/ml

Antilulcer 500
mg/kg/orl

Antiurease

Antiviral

CNS-Depressant

Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

CNS-Stimulant

Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

COX-2-Inhibitor
IC50=245 uM

Cancer-Preventive

Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.

Candidicide MIC=16-
40 ppm

Choleretic 500
mg/kg/orl

Chronotropic

Circulatory-Stimulant

Cyclooxygenase-Inhibitor Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.

Cytotoxic ED50=5-60
ug/ml

FLavor

Fungicide 1.7-250
ppm

Fungicide MIC=16-40
ppm

Herbicide Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Histaminic

Hypoglycemic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Hypotensive

Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

Hypothermic

Inotropic

Insecticide

Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Irritant

Rinzler, C. A. 1990. The Complete Book of Herbs, Spices and Condiments. Facts on File, New York. 199 pp.

Lipoxygenase-Inhibitor Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.

Monoaminergic

Mutagenic

Nematicide 100 ug/ml Shoyakugaku Zasshi, 44: 183.

Perfumery

Pesticide

Sedative

Sprout-Inhibitor Duke, JA.. Personal Communication.

Teratogenic

Termitecide LD96=1
mg/g

Termitecide LD100=5
mg/g

Tranquilizer

Tyrosinase-Inhibitor ID50=129 ug/ml

Tyrosinase-Inhibitor ID50=970 uM

Vasodilator

Vibriocide MIC=250
ug/ml

CINNAMALDEHYDE

Leaf

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Jim Duke's personal files.

Activities (60)

Acaricide

Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.

Allelochemical
IC100=2.5 mM

Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.

Allergenic

Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. Zulu Medicinal Plants. An inventory. University of Natal Press, Pietermaritzburg. 450 pp.

Anesthetic

Economic & Medicinal Plant Research, 5: 343.

Antiaggregant 200 uM Antibacterial
MIC=250-1,000 ug/ml

Antienterococcic
MIC=250 ug/ml

Antiescherichic
MIC=500 ug/ml

Antiherpetic

Antiklebsielic MIC=1,000 ug/ml		
Antileukemic		
Antimutagenic	HerbalGram No. 24, page 40.	
Antipneumonic MIC=1,000 ug/ml		
Antipseudomonic MIC=1,000 ug/ml		
Antipyretic		
Antisalmonella MIC=500 ug/ml		
Antispasmodic		
Antistaphylococcic MIC=250 ug/ml		
Antiulcer 500 mg/kg/orl		
Antiurease		
Antiviral		
CNS-Depressant	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.	
CNS-Stimulant	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.	
COX-2-Inhibitor IC50=245 uM		
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.	
Candidicide MIC=16-40 ppm		
Choleretic 500 mg/kg/orl		
Chronotropic		
Circulatory-Stimulant		
Cyclooxygenase-Inhibitor	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. <i>Zulu Medicinal Plants. An inventory</i> . University of Natal Press, Pietermaritzburg. 450 pp.	
Cytotoxic ED50=5-60 ug/ml		
FLavor		
Fungicide 1.7-250 ppm		
Fungicide MIC=16-40 ppm		
Herbicide	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
Histaminic		
Hypoglycemic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.	
Hypotensive	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.	
Hypothermic		
Inotropic		
Insecticide	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.	
Irritant	Rinzler, C. A. 1990. <i>The Complete Book of Herbs, Spices and Condiments. Facts on File</i> , New York. 199 pp.	
Lipoxygenase-Inhibitor	Hutchings, A, Scott, AH, Lewis, G, and Cunningham, A. 1996. <i>Zulu Medicinal Plants. An inventory</i> . University of Natal Press, Pietermaritzburg. 450 pp.	
Monoaminergic		
Mutagenic		
Nematicide 100 ug/ml	Shoyakugaku Zasshi, 44: 183.	
Perfumery		
Pesticide		
Sedative		
Sprout-Inhibitor	Duke, J.A.. Personal Communication.	
Teratogenic		
Termitecide LD96=1 mg/g		
Termitecide LD100=5 mg/g		
Tranquilizer		
Tyrosinase-Inhibitor ID50=129 ug/ml		
Tyrosinase-Inhibitor ID50=970 uM		
Vasodilator		
Vibriocide MIC=250 ug/ml		

CITRAL

Essential -- --
Oil

Wichtl, M. 1984. *Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft mbH Stuttgart*. 393 pp.

Activities (53)

Antiallergenic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiallergic	
Antianaphylactic	
Antibacterial	
Anticancer	
Antiheacobacter	
Antiherpetic	
Antihistaminic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory	
Antileishmanic	
Antioxidant	
Antiseptic 5.2 x phenol	
Antishock	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antispasmodic	
Antitumor	
Antitumor (Colon)	
Antitumor (Liver)	
Antitumor (Skin)	
Antiulcer	
Antiviral	
Apoptotic	
Barbituate-Synergist	
Bronchorelaxant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	
Caspase-3-Inducer	
Chemopreventive	
Cytotoxic	
Estrogenic	
Expectorant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
FLabor FEMA 4-170	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide MIC 625 ug/ml	
Glaucomagenic	
Glutathionigenic	
Herbicide IC50=115 uM	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Myorelaxant 200 mg/kg	
NF-kB-Inhibitor	
NO-Inhibitor	
Nematicide IC52=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Nematicide MLC=100-260 ug/ml	Shoyakugaku Zasshi, 44: 183.
P450-2B1-Inhibitor IC50=1.19 uM	
Perfumery	Merck 11th Edition
Pesticide	
Prostatitigenic 185 mg/kg/day/3 ms	
Sedative ED 1-32 mg/kg	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Sedative 1 mg/kg	
Teratogenic	
Trichomonicide LD100=150 ug/ml	
Trypanocide	
Tyrosinase-Inhibitor ID50=1.5 mM	
Tyrosinase-Inhibitor ID50=1,500 uM	

CITRAL Shoot -- -- Jim Duke's personal files.

Activities (53)

Allergenic	
Antiallergenic	
Antiallergic	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antianaphylactic	
Antibacterial	
Anticancer	
Antiheacobacter	
Antiherpetic	

Antiinflammatory	
Antileishmanic	
Antioxidant	
Antiseptic 5.2 x phenol	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Antishock	
Antispasmodic	
Antitumor	
Antitumor (Colon)	
Antitumor (Liver)	
Antitumor (Skin)	
Antiulcer	
Antiviral	
Apoptotic	
Barbituate-Synergist	
Bronchorelaxant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
Calcium-Antagonist	
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Carcinogenic	
Caspase-3-Inducer	
Chemopreventive	
Cytotoxic	
Estrogenic	
Expectorant	Huang, K. C. 1993. <i>The Pharmacology of Chinese Herbs</i> . CRC Press, Boca Raton, FL 388 pp.
FLavor FEMA 4-170	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide MIC 625 ug/ml	
Glaucomagenic	
Glutathionigenic	
Herbicide IC50=115 uM	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds</i> . (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Myorelaxant 200 mg/kg	
NF-kB-Inhibitor	
NO-Inhibitor	
Nematicide IC52=100 ug/ml	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Nematicide MLC=100-260 ug/ml	Shoyakugaku Zasshi, 44: 183.
P450-2B1-Inhibitor IC50=1.19 uM	
Perfumery	Merck 11th Edition
Pesticide	
Prostatitigenic 185 mg/kg/day/3 ms	
Sedative ED 1-32 mg/kg	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Sedative 1 mg/kg	
Teratogenic	
Trichomonicide LD100=150 ug/ml	
Trypanocide	
Tyrosinase-Inhibitor ID50=1.5 mM	
Tyrosinase-Inhibitor ID50=1,500 uM	

CITRONELLAL Shoot -- -- Jim Duke's personal files.

Activities (20)

Acaricide	
Allergenic	
Antibacterial	
Antiseptic 3.8 x phenol	Wagner & Wolff, eds. 1977. <i>New Natural Products</i> (RS164. I56. 176)
Antistaphylococcic	
Antistreptococcic	
Candidicide	
Embryotoxic	
FLavor FEMA <1	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	
Insectifuge	Merck 11th Edition
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. <i>Flavor and Fragrance Substances</i> , in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals</i> . VCH Publishers, New York. 3560-4253.
Motor-Depressant	Buchbauer et al, e.g.Buchbauer et al,1993.Theapeutic properties of essential oils and fragrances. Chap.12 in Teranishi,R, Buttery,R.G and Sugisawa,H. Eds. <i>Bioactive Volatile Compounds from Plants</i> . ACS Symposium Series 525. Amer. Chem. Soc., Washington DC
Mutagenic?	

P450-2B1-Inhibitor
IC₅₀=1.56 uM

Perfumery
Pesticide
Sedative ED=1 mg/kg
Teratogenic

Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)

CITRONELLOL Shoot -- -- Jim Duke's personal files.

Activities (15)

Allergenic
Antibacterial
Antiseptic
Antistaphylococcic
Antistreptococcic
Candidicide
FLavor FEMA 1-50 Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide HerbalGram No. 17.
Herbicide IC₅₀=160 uM Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Irritant Zebowitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Nematicide MLC=100 ug/ml Shoyakugaku Zasshi, 44: 183.
Perfumery Merck 11th Edition
Pesticide
Sedative Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Trichomonicide LD100=300 ug/ml

CNICIN Leaf 100.0 18000.0 Jim Duke's personal files.

Activities (10)

Antibacterial Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibiotic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiinflammatory Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antitumor Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Cytotoxic Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Emetic
Herbicide IC40-82=700 uM Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Irritant Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Pesticide

CNICIN Plant 2000.0 7000.0 *

Activities (10)

Antibacterial Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibiotic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antifeedant Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiinflammatory Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antitumor Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Cytotoxic Wagner & Wolff, eds. 1977. New Natural Products (RS164. I56. 176)
Emetic
Herbicide IC40-82=700 uM Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Irritant Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Pesticide

CNICIN Shoot 2000.0 7000.0 Jim Duke's personal files.

Activities (10)

Antibacterial Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antibiotic Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.

					pp.
Antiinflammatory	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft mbH Stuttgart.</i> 393 pp.				
Antitumor	Wagner & Wolff, eds. 1977. <i>New Natural Products (RS164. I56. 176)</i>				
Cytotoxic	Wagner & Wolff, eds. 1977. <i>New Natural Products (RS164. I56. 176)</i>				
Emetic					
Herbicide IC40-82=700 uM	Keeler, R.F. and Tu, A.T. eds. 1991. <i>Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6)</i> Marcel Dekker, Inc. NY. 665 pp.				
Irritant	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals.</i> CRC Press. Boca Raton, FL. 566 pp.				
Pesticide					
 CNICINOLIDE	 Shoot	--	--		Jim Duke's personal files.
 COBALT	 Plant	0.5	3.8	-0.35	*
Activities (2)					
Cardiomyopathogenic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.				
Erythrocytogenic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine.</i> Avon Books, New York. 509pp.				
 COSMOIIN	 Shoot	--	--		Jim Duke's personal files.
Activities (4)					
Aldose-Reductase-Inhibitor IC40=1 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry,</i> 23: 1885-1888.				
Aldose-Reductase-Inhibitor IC99=10 uM	Shimizu, M., Ito, T., Terashima, S., Hayashi, T., Arisawa, M., Morita, N., Kurokawa, S., Ito, K., and Hashimoto, Y. 1984. Inhibition of Lens Aldose Reductase by Flavonoids. <i>Phytochemistry,</i> 23: 1885-1888.				
Antibacterial MIC=500 ug/ml	Planta Medica, 57: A43, 1991.				
Candidicide MIC=500 ug/ml	Planta Medica, 57: A43, 1991.				
 CUMINALDEHYDE	 Shoot	--	--		Jim Duke's personal files.
Activities (10)					
Antibacterial					
FLavor FEMA <1	Aloe Research Council - Duke writeup of non-peer reviewed book by Coats and draft by Henry				
Fungicide	Singh*, G., Upadhyay, R.K. 1990. Fungitoxic Activity of Cumaldehyde, Main Constituent of the Cuminum cyminum Oil. <i>Fitoterapia</i> 62(1): 86, 1991.				
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253.				
Larvicide	Leung, A.Y., <i>Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics,</i> John Wiley & Sons, New York, 1980.				
Perfumery	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.				
Pesticide					
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253.				
Tyrosinase-Inhibitor ID50=0.05 mM					
Ulcerogenic	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. <i>Compendium of Safety Data Sheets for Research and Industrial Chemicals.</i> VCH Publishers, New York. 3560-4253.				
 DAUCOSTEROL	 Shoot	--	--		Jim Duke's personal files.
Activities (5)					
Aldose-Reductase-Inhibitor 0.1 mM/l rat (weak activity, 31.9% inhibition)	Fujita, T., Ohira, K., Miyatake, K., Nakano, Y., Nakayama, M. 1995. Inhibitory Effect of Perillosides A and C, Related Monoterpene Glucosides on Aldose Reductase and Their Structure-Activity Relationships. <i>Chem Pharm Bull,</i> 43(6): 920-926.				
Antileukemic					
Antispasmodic 20 mg/kg	=ICMR(Indian Council of Medical Research).1976. <i>Medicinal Plants of India.</i> Vol.1.Indian Council of Med. Res.Cambridge Printing Works, New Delhi.487 pp;ICMR.1987. <i>Medicinal Plants of India.</i> Vol.2.Indian Council of Med. Res.Cambr. Printing Works,New Delhi.600pp				
Antitumor					
Hypoglycemic	Economic & Medicinal Plant Research, 6: 158.				
 DOCOSAN-1-OL	 Plant	--	--		Jim Duke's personal files.
 DODECA-1,11-DIEN-3,5,7,9-TETRAINE	 Plant	--	--		*
 DODECA-1,11-DIEN-3,5,7,9-TETRAYNE	 Essential Oil	--	4000.0		Jim Duke's personal files.
 EO	 Plant	--	3000.0	-0.51	List, P.H. and Horhammer, L. <i>Hager's Handbuch der Pharmazeutischen Praxis,</i> Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
 FAT	 Seed	258000.0	271000.0	0.03	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
 FAT	 Plant	1463.0	11000.0	-0.59	*
 FENCHONE	 Plant	--	--		Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft mbH Stuttgart.</i> 393 pp.

Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Counterirritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
FLavor FEMA 0.1-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Perfumery	Merck 11th Edition
Secretolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

FENCHONE Shoot -- -- Jim Duke's personal files.

Activities (6)

Antialzheimeran?	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Anticholinesterase	L. Gracza (1985) as cited by Buchbauer re antiacetylcholinesterase.
Counterirritant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
FLavor FEMA 0.1-5	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Perfumery	Merck 11th Edition
Secretolytic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

FERULIC-ACID Plant -- -- List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities (61)

Allelopathic	Holappa, L.D., and Blum*, U. 1991. Effects of Exogenously Applied Ferulic Acid, a Potential Allelopathic Compound, on Leaf Growth, Water Utilization, and Endogenous Abscisic Acid Levels of Tomato, Cucumber, and Bean. <i>J. of Chemical Ecology</i> , 17(5): 865.
Analgesic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 69.
Antiaggregant	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. <i>Chem. Pharm. Bull.</i> 38(6): 1620-1623, 1990.
Antiallergic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiarrhythmic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidysmenorrheic	
Antiestrogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiherpetic	
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antineoplastic (Stomach)	
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antioxidant 3,000 uM	
Antioxidant IC51=200 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 1/2 BHA	
Antioxidant EC50=9-15 ug/ml	
Antiradicular EC50=9-15 ug/ml	
Antiradicular IC50=116-124 uM	
Antiserotonin	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antispasmodic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antithrombic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antitumor (Colon)	
Antitumor (Forestomach)	
Antitumor (Liver)	

Antitumor-Promoter IC46=10 uM	Cancer Research, 48: 5941.
Antiviral	Vlietinck, A.J. and Dommisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.
Arteriodilator	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Cardiac	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.
Cholagogue	Pharmazie, 46: 156, 1991.
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Hepatoprotective	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.
Hepatotropic	
Herbicide	Angewandte Botanik 68(5/6)=1994. Page 195.
Hydrocholerectic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Hypolipidemic	
Immunostimulant	Economic & Medicinal Plant Research, 1: 124.
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.
Metal-Chelator	McEvily, A.J., Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Pesticide	
Phagocytotic	
Preservative	Merck 11th Edition
Prostaglandigenic	
Prostaglandin-Synthesis-Inhibitor 0.58-3.2 mM	Xu, L. N., Yu, W. G., Tian, J. Y., Liu, Q. Y. 1990. Effect of Sodium Ferulate on Arachidonic Acid Metabolism. Yao Hsueh Hsueh Pao, 25(6): 412-416.
Sunscreen	Chemical Marketing Reporter; a weekly tabloid, 9/10/92.
Uterosedative 30-100 mg/kg ivn rat	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.

FERULIC-ACID Shoot -- -- Jim Duke's personal files.

Activities (61)

Allelopathic	Holappa, L.D., and Blum*, U. 1991. Effects of Exogenously Applied Ferulic Acid, a Potential Allelopathic Compound, on Leaf Growth, Water Utilization, and Endogenous Abscisic Acid Levels of Tomato, Cucumber, and Bean. J. of Chemical Ecology, 17(5): 865.
Analgesic	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 69.
Antiaggregant	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.
Antiallergic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Antiarhythmic	
Antibacterial	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Anticancer (Colon)	
Anticancer (Forestomach)	
Anticancer (Liver)	
Anticancer (Skin)	
Anticarcinogenic	
Antidysmenorrheic	
Antiestrogenic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antihepatotoxic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Antiherpetic	
Antiinflammatory	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.
Antileukemic IC50=25-56 ug/ml	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antimitotic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London.
Antimutagenic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antineoplastic (Stomach)	
Antinitrosaminic	Ki Soon Rhee. Oilseed Food Ingredients Used To Minimize Oxidative Flavor Deterioration in Meat Products. Phenolic Compounds in Food and Their Effects on Health, Ch.18.
Antioxidant 3,000 uM	
Antioxidant IC51=200 ppm	
Antioxidant 1/3 quercetin	
Antioxidant 1/2 BHA	

ug/ml					
Antiradicular EC50=9-15 ug/ml					
Antiradicular IC50=116-124 uM					
Antiserotonin	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antispasmodic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Antithrombic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
Antitumor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antitumor (Colon)					
Antitumor (Fore stomach)					
Antitumor (Liver)					
Antitumor (Skin)					
Antitumor-Promoter IC46=10 uM	Cancer Research, 48: 5941.				
Antiviral	Vlietinck, A.J. and Dommisse, R.A. eds. 1985. Advances in Medicinal Plant Research. Wiss. Verlag. Stuttgart.				
Arteriodilator	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Candidicide	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Cardiac	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.				
Cholagogue	Pharmazie, 46: 156, 1991.				
Choleretic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.				
Fungicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.				
Hepatoprotective	Mills, Simon and Bone, Kerry. 2000. Phytotherapy. Churchill Livingston, Edinburgh.				
Hepatotropic					
Herbicide	Angewandte Botanik 68(5/6)=1994. Page 195.				
Hydrocholerectic	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Hypolipidemic					
Immunostimulant	Economic & Medicinal Plant Research, 1: 124.				
Insectifuge	Tunon, H., Thorsell, W., and Bohlin, L. 1993. Mosquito Repelling Activity of Compounds Occurring in Achillea millefolium L. (Asteraceae). Economic Botany 48(2): 111-120, 1994.				
Metal-Chelator	McEvily, A.J, Iyengar, R., and Gross, A.T. Inhibition of Polyphenol Oxidase by Phenolic Compounds. Phenolic Compounds in Food and Their Effects on Health, Ch.25.				
Ornithine-Decarboxylase-Inhibitor	Hagerman, A.E. Tannin-Protein Interactions. Phenolic Compounds in Food and Their Effects on Health, Ch.19.				
Pesticide					
Phagocytotic					
Preservative	Merck 11th Edition				
Prostaglandigenic					
Prostaglandin-Synthesis-Inhibitor 0.58-3.2 mM	Xu, L. N., Yu, W. G., Tian, J. Y., Liu, Q. Y. 1990. Effect of Sodium Ferulate on Arachidonic Acid Metabolism. Yao Hsueh Hsueh Pao, 25(6): 412-416.				
Sunscreen	Chemical Marketing Reporter; a weekly tabloid, 9/10/92.				
Uterosedative 30-100 mg/kg ivn rat	Ozaki, Y. and Ma, J-P. 1989. Inhibitory Effects of Tetramethylpyrazine and Ferulic Acid on Spontaneous Movement of Rat Uterus in Situ. Chem. Pharm. Bull. 38(6): 1620-1623, 1990.				

FIBER	Plant	--	98000.0	-0.92	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
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Activities (15)

Angiotensin-Receptor-Blocker					
Antidiabetic					
Antihypertensive					
Antiobesity					
Antitumor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antilulcer	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Beta-Blocker					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Cardioprotective					
Diuretic					
Hypocholesterolemic					
Hypotensive 10 g/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Hypouricemic					
Laxative					
Vasodilator					

FIBER(CRUE)	Plant	--	98000.0	-0.11	*
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FIBER(DIETARY)	Plant	--	379000.0	0.16	*
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GERMACRANOLIDE	Plant	--	--		JIM DUKE'S PERSONAL FILES.
IRON	Plant	3.2	24.0	-0.71	*
Activities (6)					
Antiakathisic	Martindale's 29th				
Antianemic	Martindale's 29th				
Anticanker					
Anticheilitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.				
Antimennorrhaic 100 mg/day/wmn/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Prooxidant					
KAEMPFEROL-3-O-GLUCOSIDE	Plant	--	--		List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
KARDOLLIN-22	Plant	--	--		Jim Duke's personal files.
KARDOLLIN-35	Plant	--	--		Jim Duke's personal files.
KARDOLLIN-75	Plant	--	--		Jim Duke's personal files.
KARDOLLIN-85	Plant	--	--		Jim Duke's personal files.
KARDOLLIN-95	Plant	--	--		Jim Duke's personal files.
KILOCALORIES	Plant	--	2520.0	-0.72	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
LABIATIC-ACID	Plant	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
Activities (1)					
Antioxidant	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.				
LIGNANS	Plant	--	--		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Activities (10)					
Allergenic					
Antiestrogenic					
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.				
Antimycotic					
Antioxidant					
Antitumor					
Antiviral					
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				
Cardiovascular					
Cathartic					
LINOLEIC-ACID	Seed	56160.0	65520.0	-0.36	List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
Activities (27)					
5-Alpha-Reductase-Inhibitor					
AntiMS	Economic & Medicinal Plant Research, 6: 189.				
Antiacne					
Antialopelitic					
Antianaphylactic	Economic & Medicinal Plant Research, 6: 189.				
Antiandrogenic					
Antiarteriosclerotic					
Antiarthritic	Economic & Medicinal Plant Research, 6: 189.				
Anticorony	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.				
Antieczemic	Economic & Medicinal Plant Research, 6: 189.				
Antifibrinolytic	Economic & Medicinal Plant Research, 1: 53.				
Antigranular					
Antihistaminic	Economic & Medicinal Plant Research, 6: 189.				
Antiinflammatory IC50=31 uM					
Antileukotriene-D4 IC50=31 uM	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antimennorrhaic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Antiprostatitic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.				

Comedolytic	
Hepatoprotective	
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
Immunomodulator	Economic & Medicinal Plant Research, 6: 189.
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Metastatic	Science News, 146: 421.
Nematicide	Nigg, H.N. and Seigler, D.S., eds. 1992. Phytochemical Resources for Medicine and Agriculture. Plenum Press, New York. 445 pp.
Propecic	

LITHOSPERMIC-ACID	Fruit	--	--	*
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Activities (3)

Antigonadotropic	Jim Duke's personal files.
Antithyroid	Jim Duke's personal files.
Cardiotonic	

LUTEOLIN	Plant	--	--	List, P.H. and Horhammer, L. Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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Activities (78)

Aldose-Reductase-Inhibitor EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. <i>Fitoterapia</i> 64(2): 130, 1993.
Aldose-Reductase-Inhibitor IC50=0.45 uM rat	
AntiHIV	
Antiallergic	
Antiangiogenic IC60-75=10 uM	
Antiatherogenic	
Antibacterial MIC=500 ug/ml	<i>Planta Medica</i> , 57: A43, 1991.
Anticarcinogenic	
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Anticataract EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. <i>Fitoterapia</i> 64(2): 130, 1993.
Anticomplementary	
Antidermatic	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.
Antiestrogenic	
Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, <i>Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology</i> , v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antiherpetic 11-23 ug/ml	
Antihistaminic <10-15 uM	
Antiinflammatory #NAME?	Wichtl, M. 1984. <i>Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft mbH Stuttgart</i> . 393 pp.
Antileukemic 20-50 uM	
Antilymphomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antimelanomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antimutagenic ID50=2-5 nM	
Antimutagenic ID50=0.44 ug/ml	
Antinociceptive	
Antioxidant IC50=10 uM	
Antipolio	Economic & Medicinal Plant Research, 5: 197.
Antiproliferant	
Antispasmodic	Williamson, E. M. and Evans, F. J., <i>Potter's New Cyclopaedia of Botanical Drugs and Preparations</i> , Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antitumor 1-50 uM	
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Skin) 20 uM	
Antitumor (Stomach)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Thyroid) 12-50 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.

Antitussive	
Antiviral 11-23 ug/ml	
Aphidifuge	
Apoptotic 12-50 uM	
Aromatase-Inhibitor IC50=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=~40 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic 1-50 uM	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator IC>40=40 uM	
Diuretic	Jim Duke's personal files.
Estrogenic 58% genistein	
Hepatoprotective	
Hyaluronidase-Inhibitor IC50+=100-250 uM	
Hypocholesterolemic	
ICAM-1-Inhibitor	
IKK-Inhibitor	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Lipoxygenase-Inhibitor	
MAPK-Inhibitor	
MMP-9-Inhibitor 20 uM	
Metalloproteinase-Inhibitor	
Myorelaxant	
NEP-Inhibitor IC50=>42 uM	
NF-kB-Inhibitor	
NO-Inhibitor	
PTK-Inhibitor 10-100 uM	
Pesticide	
Proliferant	
Prostaglandin-Synthetase-Inhibitor	
Protein-Kinase-C-Inhibitor IC70=50 uM	
Succinoxidase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
TNF-alpha-Inhibitor IC50=14.44 uM	
Topoisomerase-I-Inhibitor	Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. Phytoestrogens: Potential Endocrine Disruptors in Males. Toxicol Ind Health, 14: 223-237.
VEGF-Inhibitor IC50=2-7 uM	
Vasodilator	
Xanthine-Oxidase-Inhibitor IC50=0.11 ug/ml	Chem. & Pharm. Bull. 38: 1772.
iNOS-Inhibitor	

LUTEOLIN Shoot -- -- Jim Duke's personal files.

Activities (78)

Aldose-Reductase-Inhibitor EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993.
Aldose-Reductase-Inhibitor IC50=0.45 uM rat	
AntiHIV	
Antiallergic	
Antiangiogenic IC60-75=10 uM	
Antithirogenic	
Antibacterial MIC=500 ug/ml	Planta Medica, 57: A43, 1991.
Anticarcinogenic	
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Anticataract EC=3 ppm	Shin*, K.H., Chung, M.S., Chae, Y.J., Yoon, K.Y., Cho, T.S. 1992. A survey for aldose reductase inhibition of herbal medicines. Fitoterapia 64(2): 130, 1993.
Anticomplementary	
Antidermatitic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.

Antifeedant IC52=<1,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Antiherpetic 11-23 ug/ml	
Antihistaminic <10-15 uM	
Antiinflammatory #NAME?	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
Antileukemic 20-50 uM	
Antilymphominc	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antimelanomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antimutagenic ID50=2-5 nM	
Antimutagenic ID50=0.44 ug/ml	
Antinociceptive	
Antioxidant IC50=10 uM	
Antipolio	Economic & Medicinal Plant Research, 5: 197.
Antiproliferant	
Antispasmodic	Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
Antitumor 1-50 uM	
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Skin) 20 uM	
Antitumor (Stomach)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitumor (Thyroid) 12-50 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. Am J Chin Med, 31(1):37-46.
Antitussive	
Antiviral 11-23 ug/ml	
Aphidifuge	
Apoptotic 12-50 uM	
Aromatase-Inhibitor IC50=1 uM/l	Journal of Medicinal Food 2: 235.1999.
Beta-Glucuronidase-Inhibitor IC50=~40 uM	
Calcium-Antagonist IC50=1.2 uM rbt	
Cancer-Preventive	
Chemopreventive	
Choleretic	
Cytotoxic 1-50 uM	
Deiodinase-Inhibitor	Jim Duke's personal files.
Differentiator IC>40=40 uM	
Diuretic	Jim Duke's personal files.
Estrogenic 58% genistein	
Hepatoprotective	
Hyaluronidase-Inhibitor IC50+=100-250 uM	
Hypocholesterolemic	
ICAM-1-Inhibitor	
IKK-Inhibitor	
Iodothyronine-Deiodinase-Inhibitor	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
Lipoxygenase-Inhibitor	
MAPK-Inhibitor	
MMP-9-Inhibitor 20 uM	
Metalloproteinase-Inhibitor	
Myorelaxant	
NEP-Inhibitor IC50=>42 uM	
NF-kB-Inhibitor	
NO-Inhibitor	
PTK-Inhibitor 10-100 uM	
Pesticide	
Proliferant	

IMMUNO

Protein-Kinase-C-Inhibitor
IC₇₀=50 uM

Succinoxidase-Inhibitor Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.* Taylor & Frost, London. 791 pp.

TNF-alpha-Inhibitor
IC₅₀=14.44 uM

Topoisomerase-I-Inhibitor Santti, R., Makela, S., Strauss, L., Korman, J., Kostian, M. L. 1998. *Phytoestrogens: Potential Endocrine Disruptors in Males.* *Toxicol Ind Health*, 14: 223-237.

VEGF-Inhibitor IC₅₀=2-7 uM

Vasodilator

Xanthine-Oxidase-Inhibitor Chem. & Pharm. Bull. 38: 1772.
IC₅₀=0.11 ug/ml

iNOS-Inhibitor

LUTEOLIN-DIGLUCOSIDE	Plant	--	--		List, P.H. and Horhammer, L, <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
LUTEOLIN-DIGLUCOSIDE	Shoot	--	--		Jim Duke's personal files.
MAGNESIUM	Plant	235.0	1770.0	-0.71	*

Activities (65)

AntiCFS

AntiLyme 400-1,000 mg

AntiMS

AntiPMS 400-800 mg/day/wmn/orl

AntiPMS 400-800 mg/day/wmn orl

AntiRaynaud's 280-350 mg/day

Antiaggregant 400 mg/day

Antialcoholic

Antianginal 400 mg/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antianorectic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antianxiety 400 mg/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antiarrhythmic 400 mg/day

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antiarthritic

Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine.* John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antiasthmatic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antiatherosclerotic 400 mg/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Anticephalagic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Anticlimacteric 500-750 mg/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Anticonvulsant

Facciola, S. 1998. *Cornucopia - A Source Book of Edible Plants.* Kampong Publications, Vista CA. 713 pp.

Anticorony 400 mg/day

Chalelm, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. *Syndrome X - The complete nutritional program to prevent and reservse insulin resistance.* John Wiley & Sons, New York. 272 pp. \$24.95

Antidepressant

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antidiabetic 400-800 mg/man/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antidysmenorrheic 100 mg 4 x/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antiendometriotic 500 mg/day

Antienterotic

Antiepileptic 450 mg/day

Antifatigue

Antifibromyalgic 200-300 mg 3x/day

Antigastrotic

Antiglaucomic

Antihyperkinetic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antihypertensive

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antihypoglycemic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antiinflammatory 100 mg 4 x/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antiinsomniac

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

Antilitic

Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine.* John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antimastalgic

Pizzorno, J.E. and Murray, M.T. 1985. *A Textbook of Natural Medicine.* John Bastyr College Publications, Seattle, Washington (Looseleaf).

Antimenopausal 500-750 mg/day

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antimigraine 200 mg/day/man

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antimitral-valve-prolapose

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antinephrolytic

Werbach, M. 1993. *Healing with Food.* Harper Collins, New York, 443 pp.

Antineurotic

Davies, S., and Stewart, A. 1990. *Nutritional Medicine.* Avon Books, New York. 509pp.

mg/day/weight	
Antiplateque 500-1,000 mg/day	
Antiretinopathic 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reservse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antispasmodic	
Antispasmophilic 500 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antistress 500-750 mg/day	
Antistroke 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reservse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antisyndrome-X 400 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reservse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Anxiolytic 500-750 mg/day	
CNS-Depressant	Facciola, S. 1998. Cornucopia - A Source Book of Edible Plants. Kampong Publications, Vista CA. 713 pp.
Calcium-Antagonist	
Cardioprotective	
Diuretic	
Hypocholesterolemic 400 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Hypotensive 260-500 mg/day	
Immunomodulator	
Insulinogenic 400 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reservse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Laxative 300-500 mg/day	
Litholytic	
Myorelaxant 100 mg 4 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Neurotransmitter	
Tranquilizer 500-750 mg/day	
Uterorelaxant 100 mg 4 x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Vasodilator	

MANGANESE	Plant	0.3	2.1	-0.68	*
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Activities (14)

AntiPMS	
Antialcoholic	Forest H. Nielsen, USDA, Grand Forks, various publications.
Antianemic	Martindale's 28th
Antiarthritic	
Antidiabetic 3-5 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antidiabetic 10-30 mg/man/day	
Antidiscotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidyskinetic	Martindale's 28th
Antiepileptic 450 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiosteoporotic	
Antiototic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antioxidant	
Antisyndrome-X 10-30 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reservse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Hypoglycemic 10-30 mg/man/day	

MUCILAGE	Plant	15960.0	200000.0	0.62	*
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Activities (3)

Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Demulcent	
Hypocholesterolemic	

MULTIFLORENOL	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
MULTIFLORENOL	Shoot	--	--	Jim Duke's personal files.
MULTIFLORENOL-ACETATE	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
MULTIFLORENOL-ACETATE	Shoot	--	--	Jim Duke's personal files.
N-DECANE	Shoot	--	--	Jim Duke's personal files.
N-DODECANE	Shoot	--	--	Jim Duke's personal files.
N-NONACOSANE	Plant	--	--	List, P.H. and Horhammer, L, Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
N-NONACOSANE	Shoot	--	308.0	Jim Duke's personal files.
Activities (1)				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
N-NONACOSANE	Seed	--	--	Jim Duke's personal files.
Activities (1)				
Antimutagenic	Economic & Medicinal Plant Research, 6: 235.			
N-NONANE	Shoot	--	--	Jim Duke's personal files.
N-TRIDECANE	Shoot	--	--	Jim Duke's personal files.
N-UNDECANE	Shoot	--	--	Jim Duke's personal files.
NIACIN	Plant	0.4	3.1	-1.03
Activities (39)				
Allergenic	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
AntiLyme 50 mg/day	Duke, J. A. Write ups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.			
AntiMeniere's				
AntiRaynaud's 1,500-4,000 mg/day				
Antiacrodynic				
Antiallergic 50 mg/2x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antialzheimeran				
Antiambylopic				
Antianginal				
Anticataract				
Antichilblain	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.			
Anticonvulsant 3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antidementia				
Antidermatitic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.			
Antidiabetic				
Antidysphagic				
Antiepileptic 3 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antihangover 50 mg				
Antihistaminic 50 mg 2x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antihyperactivity 1.5-6 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antisomnomic 1 g/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antineuragic				
Antiparkinsonian 100 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antipellagric	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.			
Antiscotomic				
Antispasmodic 100 mg 2x/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.			
Antivertigo				
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.			
Cardioprotective				
Circulotonic				
Fibrinolytic				
Hepatoprotective				
Hepatotoxic				
Hypocholesterolemic 50-100 mg 3x/day				
Hypoglycemic				
Hypolipidemic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).			
Sedative				
Serotonergic	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).			
Vasodilator	Martindale's 29th			
NICOTINIC-ACID	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
Activities (11)				
AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.			
Antichilblain 50 mg/3x/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.			

Antischizophrenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antithyrotoxic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Choleretic	
Hypocholesterolemic 1-6 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Hypoglycemic	
Insulinase-Inhibitor	Economic & Medicinal Plant Research, 6: 157.
Insulinotonic	Economic & Medicinal Plant Research, 6: 157.
Lipolytic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 NICOTINIC-ACID	 Leaf -- -- Jim Duke's personal files.
Activities (11)	
AntiCrohn's	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antichilblain 50 mg/3x/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidote (pesticides)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antischizophrenic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antithyrotoxic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Choleretic	
Hypocholesterolemic 1-6 g/man/day	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Hypoglycemic	
Insulinase-Inhibitor	Economic & Medicinal Plant Research, 6: 157.
Insulinotonic	Economic & Medicinal Plant Research, 6: 157.
Lipolytic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
 NORTRACHELOSIDE	 Plant -- -- Jim Duke's personal files.
NORTRACHELOSIDE	Fruit -- -- *
OLEANOLIC-ACID	Shoot -- -- Jim Duke's personal files.
Activities (64)	
Abortifacient	
AntiHIV IC50=21.8 ug/ml	
AntiHIV EC50=1.7 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.
AntiPGE2 IC50=24 uM	
AntiTGF-beta IC50=19-24 uM	
Antiallergic	
Antiarrhythmic 40 mg/kg	
Antiatherosclerotic	
Antibacterial MIC=625-1,250 ug/ml	
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Anticariogenic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticomplement IC40-50 0.01 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Anticomplement IC80-90 0.05 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antiedemic IC36=40 mg/kg ipr rat	
Antifertility	
Antgingivitic MIC=625-1,250 ug/ml	
Antihepatotoxic	
Antihyperlipidemic	
Antiinflammatory 40 mg/kg ipr	Aquino, R., De Feo, V., De Simone, F., Pizza, C.*, and Cirino, G. Plant Metabolites. New Compounds And Anti-Inflammatory Activity Of Uncaria tomentosa. <i>Journal of Natural Products</i> , 54(2): 453-459, 1991.
Antiischemic 40 mg/kg	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene IC50=17 uM	
Antimalarial IC50=70-89 ug/ml	
Antinephritic IC50=19-24 uM	
Antioxidant	Balanehru, S. and Nagarajan, B. 1992. Intervention of Adriamycin Induced Free Radical Damage. <i>Biochemistry International</i> 28(4): 735-744, 1992.
Antioxidant IC46=10 uM	
Antiperiodontic MIC=625-1,250 ug/ml	
Antiperioxidant IC30=200 ug/ml	

ug/ml

Antiplasmodial IC50=70-89 ug/ml

Antisarcomic

Antiseptic MIC=625-1,250 ug/ml

Antitumor

Antitumor (Breast) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Colon) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Kidney) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Lung) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antitumor (Pancreas) Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Antiulcer >carbenoxolone

Antiviral EC50=1.7 ug/ml Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. *J. Nat. Prod.*, 61 (9): 1090-1095.

Antiviral IC50=21.8 ug/ml Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. *J. Nat. Prod.*, 61 (9): 1090-1095.

Aromatase-Inhibitor

Beta-Blocker

Beta-Glucuronidase-Inhibitor ~100 mg/kg

COX-2-Inhibitor IC50=295 uM/

COX-2-Inhibitor Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from *Plantago major*, a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. *J. Nat. Prod.*, 61(10): 1212-1215.

Cancer-Preventive

Cardioprotective 40 mg/kg

Cardiotonic

Cyclooxygenase-Inhibitor

Diuretic Leung, A. Y. and Foster, S. 1995. *Encyclopedia of Common Natural Ingredients* 2nd Ed. John Wiley & Sons, New York. 649 pp.

Elastase-Inhibitor IC50=~15 uM

Hepatoprotective Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 211.

Hypolipemic

Hypotensive

Immunomodulator

Leucocytogenic

NF-kB-Inhibitor

Phagocytotic

Piscicide Prostaglandin-Synthesis-Inhibitor igs mus

ANON. 1948-1976. *The Wealth of India raw materials*. Publications and Information Directorate, CSIR, New Delhi. 11 volumes.

Sedative

Uterotonic

Vasopressor

OLEANOLIC-ACID

OLEANOLIC-ACID	Plant	--	--	*
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Activities (64)

Abortifacient

AntiHIV IC50=21.8 ug/ml

Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. *J. Nat. Prod.*, 61 (9): 1090-1095.

AntiPGE2 IC50=24 uM

AntiTGF-beta IC50=19-24 uM

Antiallergic

Antiarrhythmic 40 mg/kg

Antiatherosclerotic

Antibacterial MIC=625-1,250 ug/ml

Anticarcinomic Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. *Am J Chin Med*, 31(1):37-46.

Anticariogenic

Leung, A. Y. and Foster, S. 1995. *Encyclopedia of Common Natural Ingredients* 2nd Ed. John Wiley & Sons, New York. 649 pp.

Anticomplement IC40-50 0.01 mM/l gpg

Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. *Hager's Handbuch der Pharmazeutischen Praxis*, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

Anticomplement IC80-90 0.05 mM/l gpg

Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. *Hager's Handbuch der Pharmazeutischen Praxis*, Drogen (A-D), 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.

Antiedemic IC36=40 mg/kg ipr rat

Antifertility

Antiaainavitic MIC=625-

Antihepatotoxic	
Antihyperlipidemic	
Antiinflammatory 40 mg/kg ipr	Aquino, R., De Feo, V., De Simone, F., Pizza, C.*, and Cirino, G. Plant Metabolites. New Compounds And Anti-Inflammatory Activity Of Uncaria tomentosa. <i>Journal of Natural Products</i> , 54(2): 453-459, 1991.
Antiischemic 40 mg/kg	
Antileukemic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antileukotriene IC50=17 uM	
Antimalarial IC50=70-89 ug/ml	
Antinephritic IC50=19-24 uM	
Antioxidant	Balanehru, S. and Nagarajan, B. 1992. Intervention of Adriamycin Induced Free Radical Damage. <i>Biochemistry International</i> 28(4): 735-744, 1992.
Antioxidant IC46=10 uM	
Antiperiodontic MIC=625-1,250 ug/ml	
Antiperoxidant IC30=200 ug/ml	
Antiplaque MIC=625-1,250 ug/ml	
Antiplasmodial IC50=70-89 ug/ml	
Antisarcomic	
Antiseptic MIC=625-1,250 ug/ml	
Antitumor	
Antitumor (Breast)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Colon)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Kidney)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Lung)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Pancreas)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antiulcer >carbenoxolone	
Antiviral EC50=1.7 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.
Antiviral IC50=21.8 ug/ml	Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.
Aromatase-Inhibitor	
Beta-Blocker	
Beta-Glucuronidase-Inhibitor ~100 mg/kg	
COX-2-Inhibitor IC50=295 uM	
COX-2-Inhibitor	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Cardioprotective 40 mg/kg	
Cardiotonic	
Cyclooxygenase-Inhibitor	
Diuretic	Leung, A. Y. and Foster, S. 1995. <i>Encyclopedia of Common Natural Ingredients</i> 2nd Ed. John Wiley & Sons, New York. 649 pp.
Elastase-Inhibitor IC50=~15 uM	
Hepatoprotective	Advance in Chinese Medicinal Materials Research. 1985. Eds. H. M. Chang, H. W. Yeung, W. -W. Tso and A. Koo. World Scientific Publishing Co., Philadelphia Pa., page 211.
Hypolipemic	
Hypotensive	
Immunomodulator	
Leucocytogenic	
NF-kB-Inhibitor	
Phagocytotic	
Piscicide	ANON. 1948-1976. <i>The Wealth of India raw materials</i> . Publications and Information Directorate, CSIR, New Delhi. 11 volumes.
Prostaglandin-Synthesis-Inhibitor igs mus	
Sedative	
Uterotonic	
Vasopressor	

OLEIC-ACID Seed 159840.0 186480.0 0.55 List, P.H. and Horhammer, L. *Hager's Handbuch der Pharmazeutischen Praxis*, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities (18)

5-Alpha-Reductase-Inhibitor

Alpha-Reductase-Inhibitor	
Anemiagenic	
Antialope cic	
Antiandrogenic	
Antiinflammatory IC50=21 uM	
Antileukotriene-D4 IC50=21 uM	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Choleretic 5 ml/man	
Dermatitigenic	
FLavor FEMA 1-30	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Hypocholesterolemic	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press, Boca Raton, FL. 233 pp.)
Insectifuge	Jacobson, M., Glossary of Plant-Derived Insect Deterrents, CRC Press, Inc., Boca Raton, FL, 213 p, 1990.
Irritant	Merck 11th Edition
Percutaneostimulant	Seki, T., Toeda, C., Kawaguchi, T., Juni, K., Sugabayashi, K., and Morimoto, Y. 1990. Enhanced Transdermal Delivery of Zidovudine in Rats and Human Skin. Chem. Pharm. Bull. 38(11): 3086-3089, 1990.
Perfumery	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Propecic	

P-CYMENE	Essential Oil	--	--	Wichtl, M. 1984. Teedrogen. Ein Handbuch fur Apotheker und Arzte. Wissenschaftliche Verlagsgesellschaft. mbH Stuttgart. 393 pp.
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Activities (16)

Analgesic	Martindale's 28th
Antiacetylcholinesterase IC40=1.2 mM	
Antibacillary	
Antibacterial	
Antiflu	
Antirheumatalgic	Martindale's 28th
Antiviral	
FLavor FEMA 12-250	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Herbicide IC50=50 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Laxative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Pesticide	
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Trichomonicide LD100=50 ug/ml	

P-CYMENE	Shoot	--	--	Jim Duke's personal files.
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Activities (16)

Analgesic	Martindale's 28th
Antiacetylcholinesterase IC40=1.2 mM	
Antibacillary	
Antibacterial	
Antiflu	
Antirheumatalgic	Martindale's 28th
Antiviral	
FLavor FEMA 12-250	Aloe Research Council - Duke writeup of non-peer reviewd book by Coats and draft by Henry
Fungicide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Herbicide IC50=50 uM	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectifuge	Blaschek, W., Hansel, R., Keller, K., Reichling, J., Rimpler, H., and Schneider, G. eds. 1998. Hager's Handbuch der Pharmazeutischen Praxis, Auflage Band 2 (A-K), 909 pp., (L-Z), 858 pp. Springer-Verlag, Berlin.
Irritant	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Laxative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Pesticide	
Sedative	Zebovitz, T. C. Ed. 1989. Part VII. Flavor and Fragrance Substances, in Keith L. H. and Walters, D.B., eds. Compendium of Safety Data Sheets for Research and Industrial Chemicals. VCH Publishers, New York. 3560-4253.
Trichomonicide LD100=50 ug/ml	

PHENYLPROPANES	Plant	--	--	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.
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PHOSPHORUS	Plant	359.0	2700.0	-0.43	*
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Activities (4)

Antiosteoporotic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Anxiolytic	
Immunostimulant	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Osteogenic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.

POTASSIUM	Plant	3458.0	26000.0	0.29	*
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Activities (14)

Angiotensin-Receptor-Blocker	
Antiarrhythmic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidepressant	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antifatigue	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antihypertensive	
Antispasmodic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antistroke	
Anxiolytic	
Beta-Blocker	
Cardioprotective 3,000-5,000 mg	
Cardiotoxic 18,000 mg/man/day	
Diuretic	
Hypotensive	
Vasodilator	

PROTEIN	Seed	138000.0	175000.0	-0.52	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
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PROTEIN	Plant	12768.0	96000.0	-0.63	*
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RIBOFLAVIN	Plant	0.3	2.1	-0.65	*
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Activities (15)

AntiLyme 50 mg/day	
Antiarabiflavinotic 2-10 mg/day orl	Martindale's 28th
Anticarpal-Tunnel 50 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticataract 15 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticephalic	
Anticervicaldysplastic 1.6-10 mg/day	
Anticheilitic	
Antidecubitic	
Antiglossitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antikeratitic	
Antimigraine	
Antioxidant	
Antipellagric	
Antiphotophobic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Cancer-Preventive	Stitt, P. A. <i>Why George Should Eat Broccoli</i> . Dougherty Co, Milwaukee, WI, 1990, 399 pp.

RUTIN	Plant	--	--	Jim Duke's personal files.
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Activities (87)

5-HT-Inhibitor	
Aldehyde-Oxidase-Inhibitor IC27-52=10 uM	
Aldose-Reductase-Inhibitor 100 uM	
Aldose-Reductase-Inhibitor 4 ug/ml	Ichikawa, K., et al. 1991. Isolation and Structure Determination of Aldose Reductase Inhibitors from Traditional Thai Medicine, and Syntheses of Their Derivatives. <i>Sankyo Kenkyusho Nempo</i> , 43: 99-110.
Allelochemic	
AntiCVI 270 mg/man/day	
Antiaggregate ED50=33 nmol/kg iv	
Antiallergic	
Antiapoplectic	
Antiatherogenic	
Antiatherosclerotic	

Anticancer	
Anticapillary-Fragility 20-100 mg orl man	Merck 7th Ed.
Anticataract	
Anticlastogen	
Anticonvulsant	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antidementia	Bruneton, J. 1999. Pharmacognosy, Phytochemistry, Medicinal Plants. 2nd Ed. Lavoisier Publishing, Paris. 1119 pp.
Antidermatitic	Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
Antidiabetic	Jin, G-Z., Yamagata, Y., and Tomita, K.-i. 1989. Structure of Rutin Pentamethanol. <i>Chem. Pharm. Bull.</i> 38(2): 297-300, 1990.
Antiedemic 270 mg/day orl man	
Antierythemic	
Antifeedant	
Antiglaucomic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antihematuric	
Antihemorrhoidal	
Antihepatotoxic	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Antiherpetic	Economic & Medicinal Plant Research, 5: 198.
Antihistaminic	
Antihypertensive	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Antiinflammatory 20 mg/kg	
Antimalarial IC50=>100 ug/ml	Khalid, S.A., Farouk, A., Geary**, T.G., and Jensen, J.B. 1985. Potential Antimalarial Candidates From African Plants: An In Vitro Approach Using <i>Plasmodium falciparum</i> *. <i>Journal of Ethnopharmacology</i> , 15: 201-209, 1986.
Antimelanomic	
Antimetastatic	
Antimutagenic ID50=2-5 nM	
Antinephritic	
Antinociceptive	
Antioxidant IC28=30 ppm	
Antioxidant IC50=120 uM	
Antioxidant IC54=10 uM	
Antiperoxidant IC50=10-20 uM	
Antiplatelet	
Antiproliferant 50-75 uM/l	
Antiprotozoal	
Antipurpuric	
Antiradicular 9 x quercetin	
Antispasmodic	
Antisunburn	
Antithrombotic EC50=500 nM	
Antithyroid IC50=68 uM	
Antitrypanosomal 100 mg/kg	Planta Medica, 57: A44, 1991.
Antitumor	
Antitumor-Promoter	
Antiulcer	
Antivaricose	
Antiviral	
Apoptotic 75 uM/l	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Capillaroprotective	Merck 11th Edition
Catabolic	
Chemopreventive	
Cytoprotective IC50=3 uM	
Estrogenic?	Economic & Medicinal Plant Research, 6: 189.
Hemostat	
Hepatomagenic 20,000 ppm (diet) rat	Phenolic Compounds in Food and Their Effects on Health. Antioxidants & Cancer Prevention. Huang, M.T., Ho, C.T. and Lee, C.Y. eds. 1992. ACS Symposium Series 507 ACS, Washington 402 pp.
Hepatoprotective 20 mg/kg rat	
Hypocholesterolemic	Huang, K. C. 1993. The Pharmacology of Chinese Herbs. CRC Press, Boca Raton, FL 388 pp.
Hypotensive	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Immunomodulator	
Insecticide	Keeler, R.F. and Tu, A.T. eds. 1991. Toxicology of Plant and Fungal Compounds. (Handbook of Natural Toxins Vol. 6) Marcel Dekker, Inc. NY. 665 pp.
Insectiphile	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.

Larvistat IC95=4,000-8,000 ppm diet	Lydon, J. & Duke, S., The potential of pesticides from plants, pp. 1-41 in Craker, L. & Simon, J., eds, Herbs, Spices & Medicinal Plants: Recent Advances in Botany, Horticulture, & Pharmacology, v. 4, Oryx Press, Phoenix, 1989, 267pp.
Lipoxygenase-Inhibitor IC75=2.5 uM	Oszmianski, J. and Lee, C.Y. 1990. Inhibitory Effect of Phenolics on Carotene Bleaching in Vegetables. <i>J. Agric. Food Chem.</i> 38: 688-690.
Mutagenic	Economic & Medicinal Plant Research, 6: 189.
Myoprotective	
Myorelaxant	Economic & Medicinal Plant Research, 6: 189.
Oviposition-Stimulant	Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp.
PAF-Inhibitor	
Pesticide	
Protisticide	
Radioprotective	
Sunscreen	
Topoisomerase-II-Inhibitor IC50=1 ug/ml	Bernard, F. X., Sable, S., Cameron, B., Provost, J., Desnottes, J. F., Crouzet, J., Blanche, F. 1997. Glycosylated Flavones as Selective Inhibitors of Topoisomerase IV. <i>Antimicrobial Agents & Chemotherapy</i> , 41: 992-998.
Vasodilator	
Vasopressor	
cAMP-Phosphodiesterase-Inhibitor	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).

SALONITENOLIDE	Fruit	--	--	*
SALONITENOLIDE	Shoot	--	--	Jim Duke's personal files.
SALONITENOLIDE	Plant	--	--	Jim Duke's personal files.
SELENIUM	Plant	0.5	3.4	-0.28

Activities (60)

AP-1-Inhibitor 2-50 uM	
Analgesic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Anorexic	Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. CRC Handbook of Naturally Occurring Food Toxicants, CRC Press, Boca Raton, 1983, 339 pp.
AntiHIV	
AntiNF-kB	
Antiacne 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiaggregant	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiangiogenic 2 uM	
Antiangiogenic 230 ug/kg or rat	
Antiarthritic	
Antiasthmatic	
Antiatherosclerotic	
Anticataract 400 ug/day	
Anticirrhotic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Anticlimacteric 200 ug/day	
Anticorony 200 ug/day	
Antidandruff	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antidepressant 200 ug/day	
Antidote (Mercury)	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antifibrotic 400 ug	
Antigout 200 ug	
Antikeshan	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antileukemic 1.6 mg/kg ipr mus	
Antileukotriene	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antimaculitic	
Antimelanomic 480 ug/kg	
Antimenopausal 200 ug/day	
Antimetastatic 480 ug/kg	
Antimyalgic 200 ug/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiosteоarthritic	
Antioxidant 100-200 (-400) ug/man/day	
Antiparkinsonian 200-400 ug/day	
Antiproliferant 2 uM	
Antiradicular 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reverse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antirheumatic	
Antisyndrome-X 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reverse insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95

Antitumor (Breast) 333.6 ug/day	RESISTANCE. JOHN WILEY & SONS, NEW YORK. 272 pp. \$24.95
Antitumor (Breast) 0.8 mg/kg scu mus	
Antitumor (Breast) 150 ug/kg diet rat	
Antitumor (Breast) 230 ug/kg oral rat	
Antitumor (Lung) 240 ug/kg diet	
Antitumor (Prostate)	
Antitumor (brain) 38-150 ug/kg	
Antiulcerogenic	Rafatullah, S., Tariq, M., Al-Yahya, M.A., Mossa, J.S., and Ageel, A.M. 1989. Evaluation of Turmeric (<i>Curcuma longa</i>) for Gastric and Duodenal Antiulcer Activity in Rats. <i>J. of Ethnopharmacology</i> , 29: 25-34, 1990.
Anxiolytic	
Apoptotic	
Cancer-Preventive	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Cardioprotective 200 ug/day	
Depressant	Cooper-Driver, G. A., Chemical substances in plants toxic to animals, pp. 213-47 in Rechcigl, M., Jr., ed. <i>CRC Handbook of Naturally Occurring Food Toxicants</i> , CRC Press, Boca Raton, 1983, 339 pp.
Fungicide	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Immunomodulator	
Immunostimulant 100-200 (-400) ug/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
NF-κB-Inhibitor	
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Polyamine-Synthesis-Inhibitor	
Prostaglandin-Sparer	Fujita, T., Nakatani, E., Funaishi, N., Sakuma, S., Fujimoto, Y. Potent inhibition of prostaglandin inactivation in rabbit gastric antral mucosal slices by selenium ions in-vitro. <i>J. Pharm. Pharmacol.</i> 42: 655-657, 1990.
Protein-Kinase-C-Inhibitor IC50=2-50 uM	
VEGF-Inhibitor	

SESQUITERPENES	Plant	2000.0	7000.0	1.0	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
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SILICON	Plant	--	--	*
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Activities (4)

Antiarteriosclerotic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antionychytic	
Antiosteoporotic	
Cardioprotective	

SITOSTERYL-GLYCOSIDE	Plant	--	--	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
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SODIUM	Plant	162.0	1220.0	-0.24	*
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Activities (1)

Hypertensive	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
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STARCH	Plant	10640.0	80000.0	-0.84	*
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Activities (5)

Absorbent	Martindale's 29th
Antidote (Iodine)	Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.
Antinesidioblastosic	Martindale's 29th
Emollient	Martindale's 29th
Poultice	Martindale's 29th

STEROL	Plant	--	--	List, P.H. and Horhammer, L. <i>Hager's Handbuch der Pharmazeutischen Praxis</i> , Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
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STIGMASTEROL	Plant	--	--	*
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Activities (12)

Antihepatotoxic	
Antiinflammatory	Lawrence Review of Natural Products, 1995
Antinociceptive	
Antiphidic 2.3 ma ior	Economic & Medicinal Plant Research. 5: 363.

Antioxidant IC33=10 uM	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Estrogenic	
Hypocholesterolemic	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Ovulant	
Sedative	

STIGMASTEROL Seed -- -- Jim Duke's personal files.

Activities (12)

Antihepatotoxic	
Antiinflammatory	Lawrence Review of Natural Products, 1995
Antinociceptive	
Antiophidic 2.3 mg ipr mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC33=10 uM	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Estrogenic	
Hypocholesterolemic	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Ovulant	
Sedative	

STIGMASTEROL Shoot -- -- Jim Duke's personal files.

Activities (12)

Antihepatotoxic	
Antiinflammatory	Lawrence Review of Natural Products, 1995
Antinociceptive	
Antiophidic 2.3 mg ipr mus	Economic & Medicinal Plant Research, 5: 363.
Antioxidant IC33=10 uM	
Antiviral	Abid Ali Khan, M.M., Jain, D.C., Bhakuni, R.S., Zaim, M., and Thakur, R.S. 1991. Occurrence of some antiviral sterols in <i>Artemisia annua</i> . <i>Plant Science</i> , 75: 161-165, 1991.
Artemicide LC50=110 ppm	Jung, J.H., Pummangura, S., Chaichantipyuth, C., Patarapanich, C., and McLaughlin, J.L. 1989. Bioactive Constituents of Melodorum fruticosum. <i>Phytochemistry</i> . 29(5): 1667-1670. 1990.
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Estrogenic	
Hypocholesterolemic	Nigg, H.N. and Seigler, D.S., eds. 1992. <i>Phytochemical Resources for Medicine and Agriculture</i> . Plenum Press, New York. 445 pp.
Ovulant	
Sedative	

SUGARS Plant 15960.0 120000.0 0.02 *

SYRINGOSIDE Leaf -- -- Jim Duke's personal files.

TANNIN Plant -- 80000.0 -0.05 *

Activities (35)

Anthelmintic	
AntiHIV	
Antibacterial	
Anticancer	
Anticariogenic	
Antidiarrheic	
Antidysenteric	
Antihepatotoxic	
Antihypertensive	
Antilipolytic	
Antimutagenic	
Antinephritic	Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. <i>Chem. Pharm. Bull.</i> 38(4): 1049-1052, 1990.
Antiophidic	Economic & Medicinal Plant Research, 5: 363.

IC₅₀=1.44 ug/ml

Antioxidant 1/3
quercetin

Antiradicular 500 mg/kg/day orl mus Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Antiradicular 1/3
quercetin

Antirenitic Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Antitumor

Antitumor-Promoter

Antiulcer

Antiviral

Cancer-Preventive HerbalGram No. 22 - Spring 1990, page 14.

Carcinogenic

Chelator

Cyclooxygenase-Inhibitor

Glucosyl-Transferase-Inhibitor

Hepatoprotective

Immunosuppressant

Lipoxygenase-Inhibitor

MAO-Inhibitor

Ornithine-Decarboxylase-Inhibitor

Pesticide

Psychotropic Uchida, U., Ohta, H., Niwa, M., Mori, A., Nonaka, G-i., Nishioka, I., and Zaki, M. 1989. Prolongation of Life Span of Stroke-Prone Spontaneously Hypertensive Rats (SHRSP) Ingesting Persimmon Tannin. *Chem. Pharm. Bull.* 38(4): 1049-1052, 1990.

Xanthine-Oxidase-Inhibitor

TANNINS Plant -- 80000.0 -0.74 List, P.H. and Horhammer, L. *Hager's Handbuch der Pharmazeutischen Praxis*, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

THIAMIN Plant -- 2.7 -0.42 Pedersen, M. 1987. *Nutritional Herbology*. Pederson Publishing. Bountiful, Utah. 377 pp.

Activities (31)

Analgesic 1-4 g/day Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

AntiLyme 50 mg

Antialcoholic 50-100 mg/day

Antialzheimeran 100-3,000 mg/day Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Antianorectic

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antibackache 1-4 g/day

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Antiberiberi

Anticanker

Anticardiospasmic

Anticataract

Anticolic

Antidecubitic

Antideliriant

Antidementia

Antidyspeptic

Antiecephalopathic

Martindale's 29th
Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antifatigue

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antigastritic

Jeffery B. Harborne and H. Baxter, eds. 1983. *Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants*. Taylor & Frost, London. 791 pp.

Antihangover 50 mg

Antihartburn

Antiherpetic

Antimigraine

Antimyocarditic

Antineuragic 1-4 g/day

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Antineurasthenic

Antineuritic

Antineuropathic 50 mg

Werbach, M. 1993. *Healing with Food*. Harper Collins, New York, 443 pp.

Antipoliomyelic

Insectifuge 75-150 mg/man/day Martindale's 28th

Neuroprotective

Pesticide

THIAMINE	Plant	0.4	2.7	-0.42	*
TIN	Plant	3.3	25.0	0.28	*
Activities (4)					
Antiacne					
Antibacterial					
Pesticide					
Taenicide				Martindale's 28th	
TRACHEOGENIN	Fruit	--	--	Bisset, N.G., ed. 1994. <i>Herbal Drugs and Phytopharmaceuticals</i> . CRC Press. Boca Raton, FL. 566 pp.	
Activities (12)					
AntiHIV IC65=0.52 uM					
Antihypertensive					
Antiintegrase					
Antileukemic					
Antilymphomeric ED50=2 uM					
Antitopoisomerase-II					
Calcium-Antagonist IC50=1.1 uM					
Cardiac				Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
Cytostatic				Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
HIV-RT-Inhibitor IC57=0.52 uM					
Pesticide					
Topoisomerase-Inhibitor					
TRACHEOGENIN	Plant	--	--	Jim Duke's personal files.	
Activities (12)					
AntiHIV IC65=0.52 uM					
Antihypertensive					
Antiintegrase					
Antileukemic					
Antilymphomeric ED50=2 uM					
Antitopoisomerase-II					
Calcium-Antagonist IC50=1.1 uM					
Cardiac				Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
Cytostatic				Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants</i> . Taylor & Frost, London. 791 pp.	
HIV-RT-Inhibitor IC57=0.52 uM					
Pesticide					
Topoisomerase-Inhibitor					
TRICEC-1-ENE-3,5,7,9-TETRAYNE	Shoot	--	--	Jim Duke's personal files.	
TRIDEC-1-ENE-3-5-7-9-11-PENTAYNE	Shoot	--	--	Jim Duke's personal files.	
URSOLIC-ACID	Plant	--	--	Jim Duke's personal files.	
Activities (89)					
Analgesic					
AntiEBV				Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.	
AntiHIV EC50=2.0 ug/ml				Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.	
AntiHIV IC50=6.5 ug/ml				Kashiwada, Y., et. al. 1998. Anti-AIDS Agents. 30. Anti-HIV Activity of Oleanolic Acid, Pomolic Acid, and Structurally Related Triterpenoids. <i>J. Nat. Prod.</i> , 61 (9): 1090-1095.	
AntiHIV IC85=18 ug/ml					
AntiHIV 6.7 uM					
AntiTGF-beta IC50=6-7.5 uM					
Antialzheimeran				Ringbom, T., Seguier, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.	
Antiarrhythmic					
Antiarthritic				Planta Medica, 57: A56, 1991.	
Antibacterial					

Anticancer (Colon)	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Natl. Prod.</i> , 61(10): 1212-1215.
Anticarcinomic	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Anticariogenic	Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
Anticholestatic 28-100 mg/kg orl	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Anticomplement IC100 0.1 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Anticomplement IC80-90 0.05 mM/l gpg	Hansel, R., Keller, K., Rimpler, H., and Schneider, G. eds. 1992. <i>Hager's Handbuch der Pharmazeutischen Praxis, Drogen (A-D)</i> , 1209 pp., 1993 (E-O), 970 pp., 1994 (P-Z), 1196 pp. Springer-Verlag, Berlin.
Antidiabetic	Chemical Constituents of Oriental Herbs (3 diff. books)
Antiedemic	
Antiescherichic	
Antifibrosarcomic IC80=10 uM	
Antihepatotoxic 5-20 mg/kg ipr	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antihistaminic	Tsuruga, T., Chun, Y.-T., Ebizuka, Y., and Sankawa, U. 1991. Biologically Active Constituents of <i>Melaleuca leucadendron</i> : Inhibitors of Induced Histamine Release from Rat Mast Cells. <i>Chem. Pharm. Bull.</i> 39(12): 3276-3278, 1991.
Antihyperlipidemic	
Antiinflammatory 1/3 indomethacin	
Antiinflammatory IC24=500 mg/kg	
Antileishmanic ED50=20 uM	
Antileukemic IC50=2.5-17.8 ug/ml	
Antilymphomtic	Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals</i> . The Pharmaceutical Press, London. 296pp.
Antimalarial IC50=28-37 ug/ml	
Antimetastatic IC80=10 uM	
Antimutagenic IC57-80=80 mg/kg	
Antinephritic IC50=6-7.5 uM	
Antiobesity?	<i>Internat. J. Oriental Med.</i> 16: 4.
Antioxidant IC50=10 uM	
Antiperioxidant IC35=200 ug/ml	
Antiplasmodial IC50=28-37 ug/ml	
Antiproliferative IC50=15-20 uM	
Antistaphylococcic	
Antithromboxane IC50=50 uM	
Antitrypanosomic	
Antitumor	<i>Cancer Research</i> , 54: 701, 1994.
Antitumor (Breast) 0.5% diet	
Antitumor (Breast) IC50=15-20 uM	
Antitumor (Cervix)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Colon)	
Antitumor (Lung)	
Antitumor (Ovary)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor (Stomach) IC50=15-20 uM	
Antitumor (brain)	Chiang, L. C., Chiang, W., Chang, M. Y., Ng, L. T., Lin, C. C. 2003. Antileukemic activity of selected natural products in Taiwan. <i>Am J Chin Med</i> , 31(1):37-46.
Antitumor-Promoter	<i>Planta Medica</i> , 57: A56, 1991.
Antiulcer	Shukla, B., Visen, P.K.S., Patnaik, G.K., Tripathi, S.C., Srimal, R.C., Dayal, R., and Dobhal, P.C. Hepatoprotective Activity in the Rat of Ursolic Acid Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Antiviral IC85=18 ug/ml	
Aromatase-Inhibitor	
Beta-Blocker	
Beta-Glucuronidase-Inhibitor ~100 mg/kg	
CNS-Depressant	
COX-2-Inhibitor IC50=130 uM/	
Cancer-Preventive	Stitt, P. A. Why George Should Eat Broccoli. Dougherty Co, Milwaukee, WI, 1990, 399 pp.
Candidicide	
Cardioprotective	
Cardiotonic	

	Isolated from Eucalyptus Hybrid. <i>Phytotherapy Research</i> 6: 74-79, 1992.
Cyclooxygenase-Inhibitor	Ringbom, T., Seguar, L., Noreen, Y., Perera, P., Bohlin, L. 1998. Ursolic Acid from <i>Plantago major</i> , a Selective Inhibitor of Cyclooxygenase-2 Catalyzed Prostaglandin Biosynthesis. <i>J. Nat. Prod.</i> , 61(10): 1212-1215.
Cytotoxic 50 ppm	
Cytotoxic ED50=3.75 ug/ml	
Cytotoxic 7.2 uM	
Diuretic	
Elastase-Inhibitor	
IC50=~15 uM	
Hepatoprotective 1-100 ug/ml	
Hepatoprotective 10 mg/kg	
Hypoglycemic	Ivorra, M.D., Paya, M., and Villar, A. 1989. A Review of Natural Products and Plants as Potential Antidiabetic Drugs. <i>Journal of Ethnopharmacology</i> , 27: 243-275, 1989.
Hypotensive	
Immunomodulator	
Leucocytogenic	
Lipoxygenase-Inhibitor	
IC50=0.18 mM	
MMP-9-Inhibitor IC80=10 uM	
Ornithine-Decarboxylase-Inhibitor	
Pesticide	
Piscicide	
Potassium-Sparing 3 mg/rat	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
Protease-Inhibitor IC85=18 ug/ml	
Protisticide	Chemical Express, 7: 285, 1992.
Quinone-Reductase-Inducer 5 ug/ml	Lee, S. K., Song, Y., Mata-Greenwood, E., Kelloff, G.J., Steele, V. E., Pezzuto, J. M. 1999. Modulation of in vitro Biomarkers of the Carcinogenic Process by Chemopreventive Agents. <i>Anticancer Res.</i> , 19: 35-44.
Sodium-Sparing 3 mg/rat	Iwu, M.M. 1993. <i>Handbook of African Medicinal Plants</i> . CRC Press, Boca Raton, FL 435 pp.
TOPO-2-Inhibitor	
Trypanocide	
Vasopressor	

WATER	Plant	--	867000.0	0.41	*
ZINC	Plant	--	--	--	*

Activities (77)

ACE-Inhibitor	
Analgesic	
AntiBPH 25-60 mg/day	
AntiCrohn's	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
AntiHIV	
Antiacne 135 mg/day	
Antiacrodermatitic 8-34 mg/day/orl/chd	Martindale's 29th
Antialcoholic	
Antiallopecic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antialzheimeran 50 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiangiogenic	
Antianorexic	Martindale's 29th
Antiarthritic 50 mg/3x/day/orl/man	
Anticanker 100 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticataract 30 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Anticoeliac	Martindale's 28th
Anticold 50 mg	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Anticolitic	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Anticorony 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidandruff	Davies, S., and Stewart, A. 1990. <i>Nutritional Medicine</i> . Avon Books, New York. 509pp.
Antidementia	
Antidiabetic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. <i>Syndrome X - The complete nutritional program to prevent and reserve insulin resistance</i> . John Wiley & Sons, New York. 272 pp. \$24.95
Antidote (Cadmium)	Let's Live, May 1989.
Antidysgeuzic	
Antieczemic 150 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.
Antiencephalopathic	Martindale's 29th
Antiepileptic 100 mg/day	Werbach, M. 1993. <i>Healing with Food</i> . Harper Collins, New York, 443 pp.

Antifuruncular 45 mg/3x/day/man	Martindale's 28th
Antihangover 15 mg	
Antiherpetic? 25-60 mg/day	
Antiimpotence	Martindale's 29th
Antiinfective 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinfertility 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antiinsomniac	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antilepric	Martindale's 29th
Antileukonychic	
Antilymphomeric	
Antimaculitic	
Antimetastatic	
Antineuropathic	
Antinycatalopic	
Antidiabetes 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antiosteoporotic	
Antiperiodontic	
Antiplaque	Martindale's 29th
Antiprolactin	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antiprostatic 50 mg/man/day/orl	Pizzorno, J.E. and Murray, M.T. 1985. A Textbook of Natural Medicine. John Bastyr College Publications, Seattle, Washington (Looseleaf).
Antirheumatic	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Antiseptic 50 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antispase-Tire 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antistomatitic 50 mg/man/3x/day	Martindale's 28th
Antisyndrome-X 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antitinnitin 60-120 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Antitriglyceride 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Antiulcer 50 mg/3x/day/man	Martindale's 28th
Antiulcer 88 mg/rat/day/15 days	
Antiviral?	Martindale's 29th
Astringent	Martindale's 28th
Collagenic	
Copper-Antagonist	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Deodorant	Martindale's 29th
Detoxicant (Alcohol)	
Ergogenic	
Hypotensive 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Immunomodulator	
Immunostimulant	Davies, S., and Stewart, A. 1990. Nutritional Medicine. Avon Books, New York. 509pp.
Immunosuppressant 300 mg/day/6 wks/orl/man	Martindale's 29th
Insulinogenic 30 mg/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Leptogenic 30-60 mg/man/day	Challem, J., Berkson, Burt, and Smith, Melissa Dianne. 2000. Syndrome X - The complete nutritional program to prevent and reserve insulin resistance. John Wiley & Sons, New York. 272 pp. \$24.95
Mucogenic	Li, K.M. Effect of zinc sulphate on acetic acid-induced gastric ulceration in rats. <i>J. Pharm. Pharmacol.</i> 42: 657-659, 1990.
NF-kB-Inhibitor	
Pesticide	
Spermigenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Testosteronogenic 60 mg/day	Werbach, M. 1993. Healing with Food. Harper Collins, New York, 443 pp.
Trichomonicide	Martindale's 29th
Vulnerary	Martindale's 28th